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The D&O trademark has been recognized as a symbol of creative ability and the highest quality standards in the field of aromatics and essential oils.

WE INVITE YOU TO SUBMIT YOUR PERFUMING PROBLEMS TO OUR
COMPETENT COMPOUNDING LABORATORIES.



DODGE & OLCOTT COMPANY

August 1944



Specify:

DIAMOND ALKALIES

58% Light Soda Ash . . . Diamond Soda Crystals . . . 76% Caustic Soda (Solid & Flake) . . . Liquid Caustic Soda.

STANDARD SILICATES

Silicate of Soda, Liquid . . . Silicate of Soda, Glass . . . Sodium Metasilicate . . . Silicated Alkalies.

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—your needs and order your supplies as far as possible in advance of actual use to avoid production delays and disappointment.



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NO OTHER CLEANER LIKE IT! Current Production is SOLD OUT! . . . but it is wise for you to anticipate your future requirements and place your order NOW The alkali-proof, natural, wax-free cleaner that can be used with rinsing; or without rinsing to obtain polished appearance on floors. Contains a harmless reserve chemical which maintains a neutrally balanced solution and prevents the freeing of any harmful alkali. Safe for all surfaces! 702 South Wolfe Street, Baltimore 31, Md. 2444 East 8th Street, Los Angeles 21, California

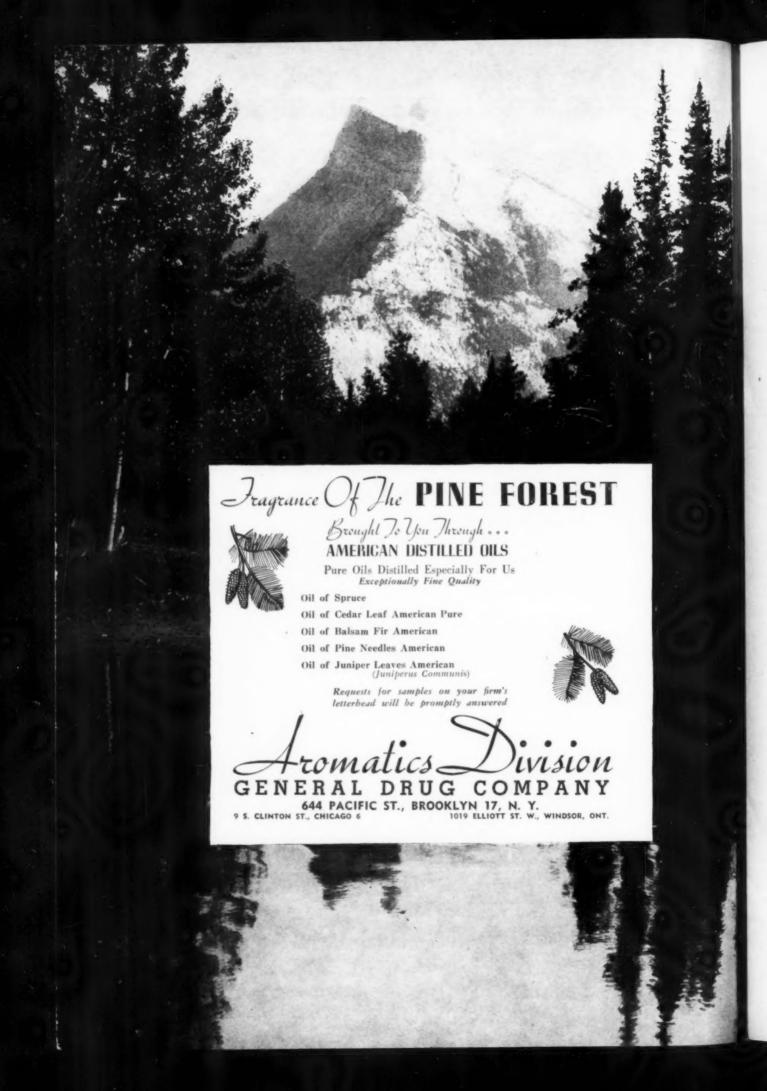
August, 1944

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Liquid Soaps, Floor Seals, Floor Treatments, Deodorant Blocks, Liquid Deodorants, Plumbing Specialties, Special Cleaners, Self-Polishing Waxes, Pewdered Waxes, Oil Soaps, Liquid Cleaners, Disinfectants, Insecticides, Metal Polishes. Furniture Polishes, Deodorant Block Holders. Soap Dispensers.

New York Sales Office: 55 West 42nd Street . Trade Mark Reg. U.S. Pet. Off.

3



SANITARY CHEMICALS

AUG. 1944

CANITARY Products Section, which forms a part of every issue of SOAP, Begins on page 71.



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Published by

MAC NAIR-DORLAND COMPANY, INC.

254 WEST 31st STREET NEW YORK 1, N. Y.

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To the trained chemist or seasoned workman the handling of Caustic Soda is a routine affair and the materials best suited for caustic soda handling are well known. Your veteran maintenance men, too, are undoubtedly familiar with the care required to prolong the life of the equipment used and to keep it in good order.

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We shall be glad to send you copies of this booklet to pass on to your plant safety departments. In it they will find much material that they can use to promote their safety programs. Your supervisory and technical personnel will also find the information it contains of value to them in their work.

Our own technical staff is also always at your service in giving you whatever help they can in the use of Caustic Soda and the other Hooker chemicals. When writing for a copy of the Hooker Caustic Soda Booklet, ask also for the Hooker General Products Lists.



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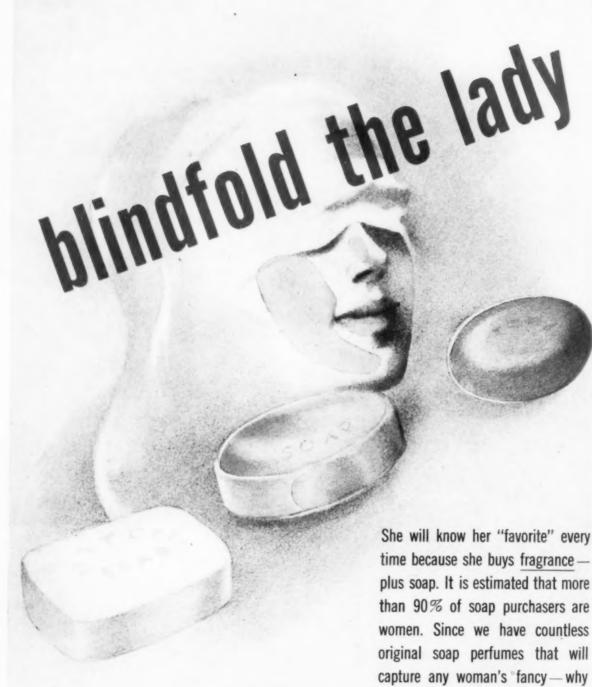
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IS THE POWDERED HAND SOAP

SALES LEADER

because it has the Winning Features
everybody likes...

* Workers like the easy way it lifts out deep pore dirt.

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* Company doctors endorse its healing effect on nicks and bruises.

August, 1944

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Say you saw it in SOAP!

9



Synthetic floral oils . . .

PRESENT reduced supplies of natural floral essences emphasize the value of high quality substitutes. Synthetic floral essences can be used to replace the natural oils with full satisfaction and marked success in numerous products,—toilet soaps, shampoos, shaving creams, powders, creams, and many others.

In fact, in many products the newer synthetic floral essences are to be *preferred* for the manner in which they reproduce the true fragrance of the living flowers in the finished product,—not to mention uniformity of quality and odor fidelity, and their economy under present conditions.

Let us tell you more about these Norda substitutes as an answer to the scarcity of natural floral oils.

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Another distinct advantage of the Proctor Flake Soap System is the fact that all parts which affect flake thickness, as well as the elements of drying, can be easily and accurately adjusted for varying conditions and products. Space between large and small rolls can be adjusted with minute accuracy to vary flake thickness. For forming perfect ribbons, roll speed is controlled through a motor variable speed transmission. Temperatures of the feed roll and chilling roll are regulated through hand valves, there being thermometers on the inlet of the chilling roll and the outlets of both chilling and feed rolls. Ribbons width is governed by spacing a number of needle markers. Carrying in conveyor can be regulated to reduce crimping of ribbons in handling different kinds of soap. Speed of dryer conveyor can be varied to suit drying times for various soaps. Automatic temperature controls are provided when it is desirable to maintain certain temperatures. Such control is just one more reason why the Proctor Flake Soap System assures consistently uniform high quality results.



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PROCTOR FLAKE SOAP SYSTEM

Manufactured by

PROCTOR & SCHWARTZ . Inc. PHILADELPHIA . PA.



mards for Beauty

WITH PROTECTION BY Dermatitis is one of the most common and costly of occupational diseases. It takes a huge toll in lost time and impaired efficiency. The cosmetic

industry, alert to the challenge in the situation, has come forward with the most practical solution to the problem yet conceived. This is the use of protective ointments, creams and lotions which cover the skin with a protective layer that withstands the irritating effects of cutting oils, solvents, greases, acids, paints and many other materials that cause trouble.

For additional protection in the formulation of such ointments, creams and lotions, Givaudan's Compound G-4 offers exceptional germicidal, antiseptic and fungicidal properties. Non-toxic and non-irritating, it is one of the few materials acceptable to the U. S. Army Quartermaster Corps for use in intimate contact with the human skin. As a highly efficient mildew-proofing agent, it is used extensively in the production of mosquito netting, balloon th, hammocks and other special "G.I." fabrics. Here is an imple of Givaudan's versatility in developing new types broducts that not only meet the needs of the perfume and metic industry but other industries as well. We are oared to work with you on adapting Compound G-4 our formulation requirements.

BUY WISELY...BUY GIVAUDAN

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-From One of Chemistry's First Families

These are the Amines we supply in commercial quantities:

Ethylenediamine
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Propylenediamine

Monoethanolamine
Diethanolamine
Triethanolamine
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Diethylethanolamine
Aminoethylethanolamine
Phenylethanolamine
Phenyldiethanolamine
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Acetoacetanilide Chloracetoacetanilide Dichloracetoacetanilide Acetoacet-o-toluidide

Morpholine
Thialdine
Phenylmethylpyrazolone

THE Amine family of chemicals is one of the largest produced by Carbide and Carbon Chemicals Corporation. Twenty-five Amines are supplied in commercial quantities, and more than twenty others in research quantities. The family is so useful that many of its members are now restricted to essential work.

Present industrial applications of the Amines arise primarily from their ability to neutralize acids. They serve as corrosion inhibitors in special lubricating oils, metal-cleaning compounds, carbon-removers, and slushing compounds for engines. Certain Amines purify the gases in plants making toluene, high-octane gasoline, aluminum, magnesium, and synthetic rubber.

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The research and development work done by Carbide and Carbon Chemicals Corporation with Amines has been repeated with the other families of aliphatic chemicals. Building with atoms and molecules, our chemists and engineers have synthesized many new chemicals, and have produced many others commercially for the first time.

Today we are producing more than 160 synthetic organic chemicals in commercial quantities. After the war these chemicals will be available for greater use by industry than ever before . . . and many new compounds with them.

BUY UNITED STATES WAR BONDS AND STAMPS

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Unit of Union Carbide and Carbon Corporation

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30 East 42nd Street, New York 17, N. Y.

PRODUCERS OF SYNTHETIC ORGANIC CHEMICALS



 True aroma, ture white color that will not discolor white soap and excel-lent solubility of Coumarin Monsanto have proved to be factors of efficiency and economy to soapmakers and perfume manufacturers. As a result, the product has won wide acceptance for the compounding of the most popular bouquets.

Monsanto, first American manufacturer of coumarin, developed the product through years of painstaking Monsanto is one of the purest chemicals known.

For complete information, prices and samples of Coumarin Monsanto, please contact the nearest Monsanto Office or write: Monsanto Chemical COMPANY, Organic Chemicals Division, 1700 So. Second St., St. Louis 4, Mo. District Offices: New York, Chicago, Boston, Detroit, Charlotte, Birmingham, Los Angeles, San Francisco, Seattle, Montreal, Toronto.



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WE'RE FURNISHING STANDARDIZED MATERIALS IN LIQUID SCRUBBING SOAPS

In spite of the difficulties in obtaining many materials, we are using standardized ingredients in our liquid scrubbing soaps. They are immediately and completely soluble in water and have effective cleaning properties. They are made for specific types of floors and it is most important that the RIGHT one be used on the RIGHT floor.

1. BUCKEYE LIQUID SCRUBBING SOAPS
PLAIN, PINE OR SASSAFRAS

For use on all surfaces that require a good neutral soap to clean. Made from a combination of freshly pressed vegetable oils, and contain a high concentration of soap value. They clean thoroughly, leave no film on terrazzo or tile floors, and eliminate the scum so often seen when improper soaps are used.

2. SANI-SCRUB LIQUID FLOOR SOAPS PLAIN, PINE OR SASSAFRAS

A heavy bodied liquid scrubbing soap. Developed particularly for cleaning rubber, rubber tile, asphalt tile, composition, mastic, and cement.

- 3. FLOREX PINE OR SASSAFRAS

 A liquid, FLOREX is a balanced detergent. Lower in soap content than SANI-SCRUB, and is recommended for use on the same type of floors.
- 4. NO. 30 SCRUB SOAP

 Has a very high soap content (30-32%). Made from a combination of vegetable oils which give abundant lather as well as thorough cleaning action. A neutral soap.

All four soaps furnished in drums, half drums, quarter drums and five gallon cans.

THE DAVIES-YOUNG SOAP CO.





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Florasynth Labs. (Canada) Ltd. — Montreal - Toranta - Vancouver - Winnipeg Florasynth Laboratories de Mexico S. A. — Mexico City



Perfect for Perfuming

LAUNDRY SOAPS . WASHING POWDERS . LIQUID CLEANSERS . POLISHES, etc.

JAVONELLA

Even when Oil of Citronella was low in price and easy to obtain, JAVONELLA was a reliable favorite. A great many manufacturers preferred its finer, cleaner odor, its uniform quality and consistent economy. And now that Citronella is so high in price and difficult to get, JAVONELLA is more important to you than ever before.

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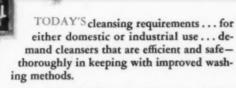
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MANUFACTURERS OF AROMATIC CHEMICALS, ESSENTIAL OILS, PERFUMES AND FLAVORS

MODERN SOAPS

Require the Best in Soapmaking and
Detergent Chemicals



As a long-established manufacturer of soapmaking chemicals, General Chemical Company offers the following products which assist soap and detergent compound manufacturers in making such soaps and cleansers:

TETRASODIUM PYROPHOSPHATE ... Steps up the cleansing action of soaps, helps build more abundant suds, washes white clothes shades whiter—colored clothes more nearly their true color. Effective agent for keeping iron salts in solution, prevents formation of "rings" and helps to eliminate scale formation in machine washers. Addition of TSPP allows an increase in percentage of builders and at the same time increases detergent efficiency of the soap for a given tonnage. TSPP, Anhydrous is for the soap manufacturer. TSPP, Diamond Grade, is particularly suited for incorporation into detergent mixtures.

SODIUM SILICATE SOLUTION ... Available in a number of grades and strengths ranging from 38° to 52° Baume. Shipped in steel drums of 55 gals., and tank cars. Also shipped in tank trucks in certain metropolitan areas.

TRISODIUM PHOSPHATE ... General Chemical Trisodium Phosphate emulsifies oils and greases, removes dirt quickly and thoroughly. It is a good water softener and soap builder, and is extremely economical. Available in four grade sizes: fine, standard, medium, coarse.

SODIUM METASILICATE ... An unusually effective "wetting agent." It has a high pH, is a "buffered cleanser," has good bactericidal properties, suspends dirt, softens water.

SULFURIC ACID

1944

General Chemical Company, one of the oldest and largest producers, offers Sulfuric Acid in all grades and of exceptional quality due to careful control maintained throughout the manufacturing process.

MURIATIC ACID

General Chemical Company commands a foremost position on this product and is prepared to offer consumers all grades from Standard to the C. P. grade.

GENERAL CHEMICAL COMPANY

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OTHER GENERAL CHEMICAL PRODUCTS FOR THE SOAP INDUSTRY

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ALUMINUM SULFATE ALUMINUM CHLORIDE

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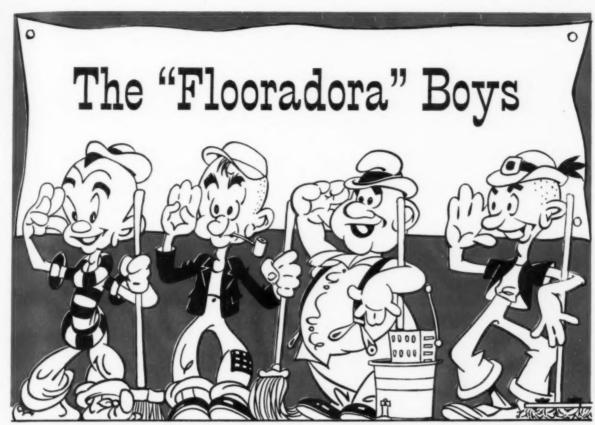


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Say you saw it in SOAP!

August, 1944

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SCRUBBY

MOPPY

RINSEY

WAXEY

"SHOW US YOUR FLOORS, turn us loose on 'em ... and we'll scrub, mop, rinse, and wax 'em in a jiffy!"

That's the word which is being sent out by THE "FLOORADORA" BOYS.

They are so cocky because they use Davies-Young Liquid Scrubbing Soaps and Beamax Liquid Floor Wax, all made with *standardized ingredients*. The soaps are immediately and completely soluble in water and have effective cleaning properties. Beamax dries to a lustrous finish without the necessity of polishing.

BUCKEYE LIQUID SCRUBBING SOAP is for use on all surfaces that require a neutral soap to clean.

SANI-SCRUB was developed particularly for cleaning rubber, rubber tile, asphalt tile, composition, mastic and cement.

FLOREX is a balanced detergent, lower in soap content than SANI-SCRUB.

NO. 30 is a neutral concentrate 30% to 32% anhydrous.

BEAMAX is most effective in developing a protective lustrous film on all types of floor surfaces.

BUCKEYE • SANI-SCRUB • FLOREX • NO. 30 • BEAMAX

It is imperetive that all floor surfaces be properly prepared for wax treatment by use of the above scrubbing soaps where their specific qualifications are required. Send for folder which gives complete information.

THE DAVIES-YOUNG SOAP CO.



THE DAVIES-YOUNG SOAP CO., 400 N. FINDLAY ST., DAYTON, OHIO

Please send folder on the treatment of floors and

Name.....

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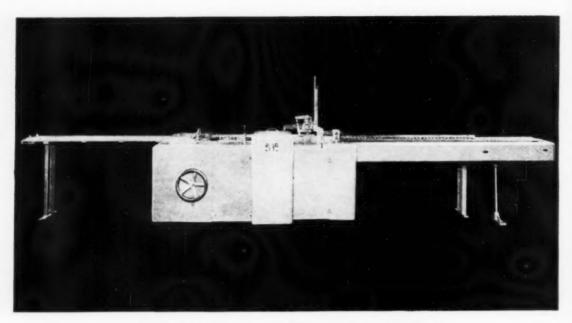
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August, 1944

1944

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21



JONES CARTONERS STANDARD THE WORLD 'ROUND

PACKAGE:

Bottles Iars Cons Shoe Polish Rubber Heels Rubber Nipples Corn and Bunion Pads Pencils Crayons Powdered Dyes

Dry Cells Radio Tubes

Spark Plugs Fly Sprays Sealing Wax

Paraffin Wax Stick Blue Candles Kodak Films

Cigars Pipe Tobacco

Pies

Ciggrettes Cakes

Crackers

Dessert Powders Frozen Fish

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Bird Biscuits

Cheese Matzos Ink

Bandages Wicks

Extracts

Shaving, Dental, Medicinal, Cold Cream and any products in collapsible Tubes. Advertising leaflets, corrugated cardboard liners inserted with load.



A second star has been added to our pennant.

Let us tell you about new models of Jones Cartoners and show you how efficiently and silently they operate. Please send us a sample of any package you wish to carton and let us tell you how much money and worry we can save you. Then make up your own mind.

& COMPANY, INC.

O. BOX 485

AS THE SEES IT

BECAUSE on the initial opening of bids for 100,000,000 pounds of yellow laundry soap for shipment overseas the quantities taken by soap manufacturers were inadequate, WFA has been compelled to reopen the bids and request manufacturers who have not bid or bidders who can take larger quantities, to do so at once. This situation was to a degree anticipated and predicted a month ago. It results from a combination of circumstances and is not a reflection on the patriotism of the American soap industry. To the limit of its physical ability, American soapers are willing to supply the Government with every pound of soap it may want or need.

Every soaper is quite familiar with the circumstances, but there are many on the outside who may be inclined to be critical. As in many other industries, the labor situation in every soap plant has gone from bad to worse over the past six months. In some plants, labor has become acutely scarce, scarce to the point that soap manufacturing equipment stands idle because of a lack of qualified men to operate it. In large defense plant areas, war factories have stolen men away from the soap industry right and left, and there has been little that the soapers could do about it. At the same time, the soap industry is committed for deliveries of soap in a heavy tonnage for both industrial uses,-much of it directly in the war program,-and for necessary civilian requirements. This soap has been sold and must be delivered,—or else. And into a situation like this, an order for 100,000,000 pounds of soap is obviously a rather large order.

If labor in the soap industry had had the status of essentiality of some other industries over the past year or two, production of this extra tonnage of soap might present less of a problem today. A little earlier anticipation of the need for such a large quantity of soap would also have helped. But as things stand, any soaper who takes a material part of the business,—not forgetting that the capacity of the industry for yellow laundry soap is not unlimited,—must do so at a sacrifice of committments already made.



HOSE who object to government regulations on the sale and use of rosin state that stocks in the hands of consumers, both large and small, are the greatest in history. They maintain that in view of the shortage of fats in 1943, many soapers bought far ahead in their rosin requirements and that they have continued to buy heavily, limited only by the tonnage which naval stores producers would sell them. In short, they hold that rosin stocks of the country are now mainly in the hands of consumers, particularly soap manufacturers, instead of being in the warehouses of the producers. These stocks, they state, are ample for reasonable needs until late in the year and there is no necessity to regulate sale or use.

If experience is a criterion, the less regulation in the consumption of rosin the better it will be for all concerned. We do not know of a better regulator in the use of any product than the manufacturer who feels that he may have difficulty replacing a stock of raw material which he is currently consuming. Although the fiscal year ending last March 31 showed that the soap industry consumed more rosin than in any previous year, we feel that this may be a reflection of the tallow and grease situation then. With

. 1944

a better supply of fats and oils for soap manufacture and the threat of a genuine rosin scarcity, the average soaper is going to modify his use of rosin to the changed conditions. To avoid any sort of government regulation, if possible, is to avoid adding rosin headaches to others of the soapers and naval stores producers.

Of course, an increased rosin production is a better solution of the problem if and when such increase can be effected. Government aid to make the necessary equipment available to the naval stores producers is much to be preferred to regulating consumption of stocks already in consumers' hands. In the case of some soapers, any such restrictions may throw their production schedules out of order and result in losses of equipment time and man hours when such can be ill afforded, as well as scramble production costs. Unless the situation is far worse than it appears to the outside observer, it would seem that regulation of any kind as yet might be avoided.



HE outlook for coconut oil supplies continues rather dark. Efforts of the War Food Administration to tap the reputed plentiful supplies of copra in the South Pacific and down around India way are still running into one difficulty after another. It would seem that where copra and oil are available, ships cannot get in to pick them up on account of military restrictions, and where the ships can now pick up copra, the labor situation has reduced its collection and preparation to a minimum. Furthermore, the opinion has been expressed in Washington that this situation is likely to continue for several months at least.

All this adds up to the fact that coconut oil will still be scarce for some time as the chances of augmenting present supplies remain small. Soapers must still get along on short coconut rations and substitutes. They have the assurance, however, that

WFA is doing everything it can to get more oil to this market, and just the minute the ships can get to the oil, new supplies will be rushed to take care of the needs of American soapers.



PALM to WFA for its praiseworthy willingness to relinquish controls over the soap industry's raw materials, as fast as it becomes clear that the controls are no longer necessary. Over the past few months, in the light of a changing supply picture on fats and oils, glycerine, etc. the WFA has been quick to repeal such of its restrictive regulations as have outlived their usefulness. This is a welcome contrast from the customary bureaucratic practice of keeping regulations in effect long after the occasion for their imposition has passed. It is a policy which is calculated to retain the full cooperation of the industry in living up to the letter and spirit of such restrictive rules as must still be kept in force.

In another direction, however, it is our feeling that WFA policy needs a little modification. In announcing the release of lard from quota restrictions last month, soap makers were given a scant two weeks after the date of the announcement to get their requests in to WFA. It might well have happened that some soap makers, dependent on the trade press for news of such a development, would have found the application period passed before even learning of the WFA's action. On lard, of course, where there are only a very few soap makers who are interested, the point blank notice made no difference. On some other soap raw material, more widely used by the industry, however, such a brief period for filing of applications could work a very serious hardship on some concerns. Perhaps the WFA might be able to arrange on future announcements of this type to allow a little more leeway between date of initial announcement and time for final filing of applications.

Newer Industrial Uses for SOAPS

BY MILTON A. LESSER

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OAP has always had some uses in industrial processes. During the last few years, however, it has become a really major industrial raw material and there is hardly a phase of modern production where it does not find important and often very new applications. Today one finds soap being employed in such varied ways as preventing "drowning" of oil wells, to solving difficult mathematical problems.

To most people, soap is just a good cleansing agent. The industrial chemist, however, looks upon soap, not only as an excellent detergent, but also as his most important emulsifying and dispersing agent. He has come to know that aqueous emulsions or dispersions made with soaps can do jobs that were formerly thought possible only through the use of expensive organic solvents. Through the use of soap and with water as the chief diluting agent, the technologist has opened up tremendous possibilities for creating new types of products at greatly reduced cost.

But these are not the only characteristics which make soap so important industrially. Because of its low surface tension, soap still remains a premier "wetting" and penetrating agent. This same property accounts for soap's sudsing or frothing ability, a characteristic that industrial workers have put to very good use. Then, too, one cannot overlook the fact that soap is a chemical substance. Often a most troublesome property, the ability of soaps to react with salts of calcium, magnesium, aluminum, etc. to form "metallic," insoluble soaps, is frequently deliberately called upon by the chemist to do specific and important jobs for industry. (1)

Of course, one cannot overlook the fact that soap, as generally thought of, is actually a mixture of salts of various fatty acids. Hence, different soaps will vary in their physical and chemical properties according to the type of materials that went into their making. While this is not always the case, it is understandable why chemists often specify the type of soap to be used for a particular purpose. Sometimes mixed fatty acid soaps are required, but frequently a soap of a single fatty acid, such as sodium oleate, is most efficient.

Soap has come a long way as an industrial material, (2, 3, 4) but there can be no doubt that the biggest story in recent years has been its employment in the emulsion polymerization processes for making synthetic rubber. The story of this major development has often been well told, (5, 6, 7) and has been given in detail in this publication, (8) so it hardly needs repetition here. Sufficient to say that the prediction that 100,000,000 pounds of soap would be needed has been adequately fulfilled.

As an emulsifying agent, soap also plays an important part in reclaiming old rubber. (9) At the moment, the importance of reclaim in solving the rubber problem has grown less as the supply of scrap has decreased and as the synthetic rubber plants approach full production. Nonetheless, because the amount of reclaim available is an important price factor in normal times, it is of interest to note that new methods for using such rubber, based on the use of soap as an emulsifier, (10) are continuously being developed.

Soap also finds use in the actual processing of rubber. One of the most important uses of ordinary soaps is as lubricants during the molding of rubber articles. (11) Methods for making foamed rubber products have called upon certain soaps, such as ammonium stearate, as an integral part of the procedure. (12)

NOTHER fairly new use for soap that has not been so widely publicized is its employment in methods for preventing water seepage into oil wells. As an oil man will tell you, controlling or excluding water to prevent "drowning" of wells is the bane and bugaboo of the production man, and with petroleum the basic raw material for gasoline, solvents, lubricants, synthetic rubber and a host of other war essentials, this problem is today even more acute.

A few years ago, workers in the Texas oil fields learned that pumping a soap solution into the bore holes of oil wells served to plug the pores of underground sands and rock formations without interfering with the oil flow. The soap, reacting chemically with the magnesium and calcium salts in the water, forms tough, resistant curds. (13) Other workers have since worked out similar methods for preventing water seepage into both oil and gas wells; using trisodium phosphate or alumite to control the rate of penetration and plug formation by the soap solution. (14)

Methods for recovering oil from depleted sands or for increasing the productivity of wells also call soap into active use. Oil men have learned that forcing acids into rock formations often will dissolve enough of the formation to permit the flow of oil or gas from "lost" deposits into the main well section, thereby avoiding the need for drilling new wells. Unfortunately, the

acid may also open up a brine deposit and cause it to flow into the oil-bearing areas-a most undesirable occurrence. To guard against this, a method (15) has been devised to force a concentrated soap solution down the well and into all parts of the formation. The solution, seeping through the rock pores, reacts with the calcium and magnesium salts to form insoluble, sealing precipitates. The remaining soap solution is then withdrawn and the acid pumped in. The soap-formed, insoluble plugs bar the way to the brine areas, but permit the acid to open a channel into the petroleum deposits.

To obtain better yields and to increase the efficiency of flooding methods for recovering residual oil from depleted oil-bearing sands, it has been proposed to first treat the strata with a viscous soap and phenol solution. In this patented method, (16) a uniform flow is obtained and the trapping of oil is prevented by injecting the soapphenol solution into an input well, this to be followed by injecting water into the same well. The liquids are then forced through the sands toward an output well where the mixed fluids can be pumped out together with the oil forced out of the sands. Another process utilizes the ability of certain commercial soaps to form a tough durable foam when mixed with gases. By this means it has been found possible to "lighten" oil columns and start wells flowing under their own pressure. (17)

Drilling "muds" are essential in well boring operations because they serve both to lubricate the bit and to plaster the walls of the well. While soap cannot be considered a standard ingredient of such muds, it has been learned that its addition offers many advantages under certain circumstances. Thus, soaps have been added to muds to increase wetting properties (18) or to improve their stability. (19) As a matter of fact, Russian studies (20) have shown that, when drilling through quartz-bearing rock, flushing with ordinary soap solutions increases the boring speed while at the same time it decreases the wear on the tools.

"Mining" for bituminous materials with soap solutions is certainly a novel approach to removing these substances from deep deposits, especially when these products are mixed with sand, gravel, shale or the like. Actually the problem has been overcome by using soap solutions to emulsify the bitumens. The solution is forced down into the formation and surged back and forth until an emulsion is formed. This can then be pumped to the surface and the emulsion broken to recover the bitumen. (21)

Actually, however, one could use the bitumen emulsions as they are or with minor modifications for a host of important applications. One major use for such emulsions is in road building and in road-oiling. While such usage has been known for some years, there is considerable proof in the patent literature (22, 23, 24, 25, 26) that bituminous emulsions made with soap will find ever-increasing utility not only in road-building but in many other phases of the construction industry as well.

One of the more recent applications of soap-emulsified bitumen, and one with many potentialities in the immediate present as well as in the post-war reconstruction period, is a method (27) for preparing building blocks from readily-available materials. Only emulsified asphalt and clayey soil, the latter often available in the vicinity, are required. The combination is run through a mixerextruder and forced out in the form of blocks, which dry in about 24 hours, so that little storage space or waiting is necessary. The blocks formed by this method are quite strong, have a smooth surface and are able to take

FAR from being limited to use with bituminous materials, soap is finding increasing uses as an emulsifier for other compounds useful in various types of construction treatment. Soap, for example, is used to disperse paraffin or the like in making waterproofing compositions for treating concrete, (28) and in preparing similar wax emulsions for use in roads or for impregnating fibrous materials. (29)

Soap has also been suggested as a component of fillers for plaster mortars. (30) Of interest in this connection is a dry fibrous material which,



when mixed with water, forms a soundinsulating plaster for use on walls and ceilings. (31) This is made by combining:

Mangled cellulose		
Fibered asbestos		
Titanium dioxide	1	lb.
Powdered dry soap	4	OZ.
Copper sulfate		
Dextrin or glue (dry)	5	lb.
Cream of tartar	3	OZ.
Sodium bicarbonate	3	OZ.

Again illustrative of the varied way in which soap may be used in building materials is its employment in the following insulating and priming paste of foreign origin: (32)

		parts
Soft soap		70.0
Soaked lime		4.5
Alum		2.5
Zinc fluosilicate crystals		2.75
Sodium silicate liquid	* *	3.5
Glycerine		2.5
Aqueous soap solution (con		
taining 0.63 parts crude cre	es.	
ol)		13.0



One of the most recent new industrial uses for soap, widely publicized over the past year or two, is its role in the manufacture of synthetic rubber by emulsion polymerization. Photo courtesy U. S. Rubber Co.

Ore flotation is a process which makes possible the economical extraction of formerly useless sources of essential metals. This procedure entails the separation of metals or their compounds from crushed ore by controlling the chemical composition of the so-called "carrying" liquid so that the desired metal will either float to the top or sink to the bottom, according to the system used. Various soaps make good carrying liquids for a large variety of important minerals and the use of soap in froth flotation processes is growing. (33, 34) Reports from many parts of the world show that soaps are used in flotation processes for

concentrating ores containing such metals as iron, tungsten, tin, mercury, phosphorus and arsenic. In addition, patents have recently been granted for methods based on the use of soap for removing iron and titanium compounds from sands (35) for concentrating tin-bearing materials, (36) and for the froth flotation of cement raw materials. (37)

In addition to its help in securing metals, soap plays a frequent role in their processing and final fabrication. Indeed, it touches upon so many phases of metal treatment that it is possible to mention only a few newer uses from the technical reports. Soap, for example, is frequently used in compounds for case hardening iron and steel. An example of such use is given in the following formula from a recent patent: (38)

Salt															lb.
Coal	dust	×		*		*	*		×	*		×	*	,	160
Soap			×					*					*		60
Char															
Dried															

Soap is a rather standard ingredient of cleansing or degreasing solutions for metals prior to electrolytic treatment. Illustrative of such use is the following degreasing solution which is said (39) to be very satisfactory for treating magnesium die castings:

Trisodium phosphate	. 4	4.0 oz.
Sodium carbonate	. 4	4.0 oz.
Soap	. (0.1 oz.
Water, to make		

In cutting or shaping metals on lathes, drills and such, a good lubricant is a prime necessity to maintain the life of the valuable tools and to assure a clean job. Oils have been much used for this purpose, but often have the disadvantage of low heat capacity and undesirable high viscosity as well as being expensive. Many of these disadvantages have been overcome by using soap to emulsify the oils with water. By this process, the cutting fluids retain the desired lubricating qualities of the oil plus those supplied by the soap itself, viscosity is controlled, cooling qualities enhanced, cost reduced and, through the lowered surface tension supplied by the soap, good wetting and quick penetration to the cutting edge is attained. (3)

Sometimes a cutting fluid for metals will require no oil at all; depending largely on its high soap content. For example, a solution suitable for drilling or cutting steel may be made, according to one patent, (40) by using a soap stabilized aqueous dispersion of lime and iron oxide. Slight modification in the ingredient proportions makes the composition suitable for wire drawing or other metal forming operations.

As a matter of fact, soap is a requisite for lubricating metals during draw pressing, for wire drawing and related metal shaping processes. (41, 42) Soap finds such extensive use in cold metal drawing not only because it

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stands up under the terrific pressures required for shaping the metals, but also because it is clean, easy to handle, concentrated and readily adaptable to many varying conditions. Dry drawing uses powdered soap, while wet drawing employs powdered or flake soap as well as soft soap. (43) In some cases, soap is the sole lubricating agent, as in a recent patent (44) which requires that the metal to be formed be first immersed in an aqueous soap solution for at least one hour. In other examples, soap is one of several ingredients used to coat the metal prior to drawing. (45, 46) In one very recent instance (47) a combination of from 2-4 parts of sulfur are used with from 1-3 parts of soap in wire drawing.

The role of soap in industrial lubricants is an old story constantly brought up to date by new developments. To meet new requirements, soaps have been added to lubricants for airplanes, pumps and carburetor valves. The greases so formed show less tendency to leak away from the points of friction, adhere better to rolling surfaces, and are resistant to the solvent action of gasoline. New aviation lubricants that will remain effective under the wide range of conditions encountered in flying also take advantage of soap as an important ingredient. (4) In addition lubricating experts have developed new soap-containing greases. Some are designed for more or less general uses (48, 49, 50, 51, 52, 53) while others have been prepared to meet specific requirements such as noncorrosive action (54) or resistance to separation and breakdown. (55)

A FEW years ago, people might have smiled rather indulgently if one had told them that soap would be an important ingredient of paints which could be applied after diluting a concentrate with plain water. Today "water" emulsion paints—actually dispersions of synthetic resins plus other ingredients — are here to stay and, moreover, are extending their range of usefulness. (56) Undoubtedly, the initial acceptance of these products was due to the war-born unavailability of standard paint solvents, but today they stand accepted on their own merits.

As pointed out by Elm and Werthan, (57) the increasing popularity of emulsion paints rests upon such factors as: (a) Use of water as a diluent, (b) Ease of application, (c) Easy formulation to meet varying requirements such as low sheen, bright and clear tints or pastel shades, high opacity and other desirable qualities, (d) Freedom from objectionable odors and fire hazard, (e) Quick drying which makes possible the application of two coats in one day, (f) Economy of the finished paint job, and, (g) The ease with which brushes may be cleaned, an important consideration to the painter.

These authorities, who prefer to use ammonium oleate as the emulsifying agent, stress the value of resin-oil emulsion paints for interiors. Alkyd resin emulsions, among the first to be available, are being used in increasing quantities, not only in interior wall paints but also in exterior paints for cement, concrete, cinder blocks and similar surfaces. Pearce (58) has noted that such alkyd resin emulsion paints are more satisfactory than the oil and quick drying types for porous surfaces.

The organic solvent shortage has also focused interest on newer, soaputilizing paint removers. Illustrative of such products is the following paint remover, the ingredients of which should be mixed in a paint mill: (59)

	Parts
Tripoli	26.0
Mineralite	30.0
Neutral soap powder	24.0
Denatured alcohol	. 13.5
Water	. 50.0

THE textile industry has always been one of the largest consumers of soap. Indeed it may be said that somewhere along the line soap touches almost every phase of converting raw, fibrous materials to finished textiles, (60, 61) and as new materials find their way into the industry, soap finds conjunct use in their processing. This was true in the case of nylon, (62, 63) and will undoubtedly prevail as other fibers find wide employment.

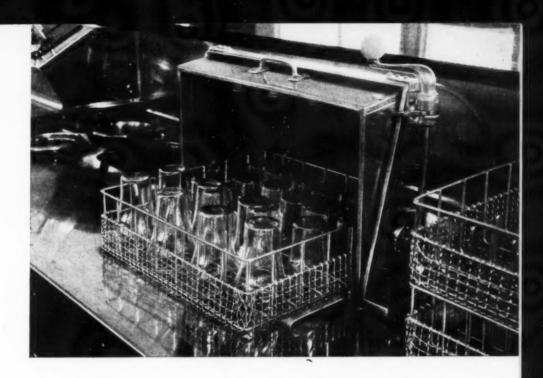
In his discussion on the industrial importance of soaps, Burke (1) listed some of the better known uses in textile processing as follows: (a) Scouring of raw wool, (b) Cleansing of oily piece goods, (c) Felting wool

fabrics, (d) Kier boiling of cotton, (e) Bleaching and cleaning of cotton and rayon goods, (f) In wetting out textiles, (g) As emulsifying agents, (h) As leveling agents in dyeing, (i) For foam dyeing, (j) As softening agents, (k) As filling agents, and (l) Shower-proofing products. To this might well be added the value of soap as a textile lubricant, (64) as a component of special finishes and coatings, (65, 66) and as delustering agents for rayon. (67)

A check through the more recent industrial literature shows that soap has found other important uses in newer textile processes. Among these is the use of soap in creaseresistant finishes, (68, 69) and in processes for producing a wool-like character in rayon. (70) Quite interesting is a new soap-utilizing process for treating knitted goods so as to give them the appearance of woven fabrics. (71) The patent for this last process is now vested in the Alien Property Custodian. Especially noteworthy is the increasing frequency with which soap is being specified in new, improved textile dyeing and printing processes. (72, 73, 74, 75)

CPACE considerations forbid exten-Sive consideration of many recently developed uses for soap in industry, but a few warrant some mention. Among these should be included the growing use of soap in the flotation of so-called "white" water. (76) By this process, the paper industry is able to separate and recover useful fibrous and filler materials-an important consideration in these days of paper shortages. The methods are still in the stages of development and several new patents (77, 78) have been granted during recent months. Pertinent, too, is the quite extensive use of soap in reprocessing scrap paper, where it serves to help remove ink, sizing and oils. (4) Soap, of course, has an established place in the processing and finishing of papers (79, 80, 81) as well as in the formulation of inks for printing on them. (82)

Similarly worthy of mention is the increasing use of soap in connection (Turn to Page 70)



DISHWASHING SANITATION

BY W. A. HADFIELD* Pennsylvania Salt Mfg. Co.

HE food processing industry, especially the dairy industry, employs every means known to the sciences of bacteriology and chemistry to produce and merchandise dairy products of excellent quality and to prevent the transmission of milk borne diseases such as typhoid fever, tuberculosis, and septic sore through the avenue of milk and its products. These precautions require the annual expenditure of millions of dollars and time of thousands of health officers. Yet all may be lost if foods are placed and served in dishes, glasses and utensils which have not been properly cleansed and sanitized. Public health officials are recognizing the fact that no food control program is complete unless consideration be given to the bacteriological condition of the utensils in which the foods are dispensed.

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The classical researches and publications of Lynch and Cumming (1) on the epidemology of the influenzapneumonia epidemic during World War I showed very clearly and definite-

ly that insanitary washing of mess kits and other indirect contacts were responsible for the increased number of cases of this disease among troops who washed their mess kits individually in a common receptacle, in comparison with soldiers whose tableware was washed by a limited personnel. An investigation of the incidence of influenza among 66,000 troops, 31,000 of whom ate from tableware and 35,000 from mess kits washed by the men themselves showed that the rate of infection of the former group was 51 per 1,000 and 252 per 1,000 for the latter group. The ratio in the two groups is 1 to 5. This study was extended to the civilian population in Chicago and Washington and included 21,411 business men and women, of whom 17,236 ate from machine washed dishes and 4,175 from hand washed dishes. In the machine washed group there were 349 cases, a rate of only 20 per 1,000, while in the latter group 429 cases of influenza-pneumonia occurred, a rate of 103 per 1,000. Again the ratio was 1 to 5 showing, as in the Army, that the exposure to infection

from hand washed dishes is five times greater than in the group which ate from the machine washed dishes.

The question is often asked, in spite of the above evidence, whether or not organisms present in the oral cavity of man may be transmitted by eating and drinking utensils. In order to establish this fact many public health officers have studied the bacteriological condition of dish water and utensils. De Groff (2) reported wash water counts ranging from 0 to 20,480,000 per ml. and rinse waters from 40,000 to 58,240,000 per ml. The average count per ml. of 11 wash waters was 5,246,000 and of 11 rinse waters of 6,800,000 per ml. The average temperature of the wash waters was 94.6° F. and rinse waters 90° F. Mallmann and Devereux (3) reported excessive numbers of bacteria were found on most of the glassware in taverns. Krog and Dougherty (4) reported the average bacterial count of the wash water of 12 eating and soft drink establishments as 175,000 per ml., with the average temperature of wash water in 20 restaurants of

^{*} Before 30th mid-year meeting, Natl. Assn. Insecticide & Disinfectant Mfrs., Chicago, June 12, 1944.

100.4° F. and a rinse water average temperature of 109.5° F. in 11 such places. It is also interesting to note that these workers found the average temperature of the rinse water in 19 alcoholic beverage places was 72.3° F. This is significant because the temperatures reported are within the range of the optimum growth temperature of many organisms found in the oral cavity of man.

A few investigators have reported the isolation of specific bacteria from eating utensils. Saelhof and Heinekamp (5) studied the contamination with Streptococcus haemolyticus and found in 63 examinations that this organism was present on 6.23 per cent of the dishes ready for service. Abele (6) made an interesting study in the city of Montgomery, Ala., and found that potentially pathogenic bacteria were present on 40 per cent of the rims of glasses examined.

One of the first municipalities in the country to recognize by ordinance the necessity of sanitizing glasses, dishes and other eating utensils was the city of Chicago. Under the direction of Dr. Herman N. Bundeseu, the present Health Commissioner, a regulation for the control of dishwashing in public eating and drinking establishments was adopted July 17, 1926. This was an outstanding public health recognition that eating and drinking utensils may be a means of the transmission of respiratory diseases.

The U. S. Public Health Service first became actively interested in 1934. In that year minimum restaurant sanitation regulations were proposed and in March, 1938 a tentative ordinance and code were issued. In 1940, the Public Health Service Sanitation Advisory Board reviewed the tentative edition and in June, 1940 the "Ordinance and Code Regulating Eating and Drinking Establishments" was issued. The function of the code is clearly stated in the preface and reads as follows: - "The following ordinance and code regulating eating and drinking establishments is recommended by the U. S. Public Health Service for adoption by states, municipalities and health districts in order to

encourage a greater uniformity and a higher level of excellence in sanitary control of eating and drinking establishments."

Fuchs (7) reported that in six states, state boards of health regulations based on or similar to the Public Health Service ordinance are enforced state-wide. These are Nevada, Oklahoma, South Carolina, Kentucky, Mississippi and North Carolina. In five additional states, Arkansas, Florida, Georgia, Indiana and Missouri, the enforcement is not statewide but is left to the local health officers. In addition 74 counties and 123 municipalities located in 19 states have legally adopted the ordinance or a similar ordinance or regulation based thereon.

Hand Washing of Dishes

In the hand washing of dishes, it is necessary to use an effective bactericide in the rinse water in order to sanitize the dishes and glasses. Much work has been reported in the literature showing the necessity of such a procedure and the effectiveness of hypochlorites, organic compounds carrying available chlorine and the quaternary ammonium compounds.

The generally accepted method is known as the three sink method in which the dishes and glasses are first washed in water having a temperature of 110 to 120° F. containing either soap or an alkaline manual cleanser, second rinsed in clean, warm water and third immersed for at least two minutes in a chlorine solution having an initial concentration of at least 100 parts available chlorine per million parts of water (p.p.m.) at a temperature 110° F. prepared from a hypochlorite. The concentration of the rinse water must not be allowed to decrease below 50 p.p.m. The purpose of such a procedure is to remove from the utensils soil and soap in the water rinse because the carry over of these into the sanitizing solution will cause an abnormal loss of its bactericidal ingredient. If the soda fountain or restaurant is not equipped with a three compartment sink, a two compartment one may be used. In this method the dishes and glasses are first rinsed in flowing hot water to remove the soil;

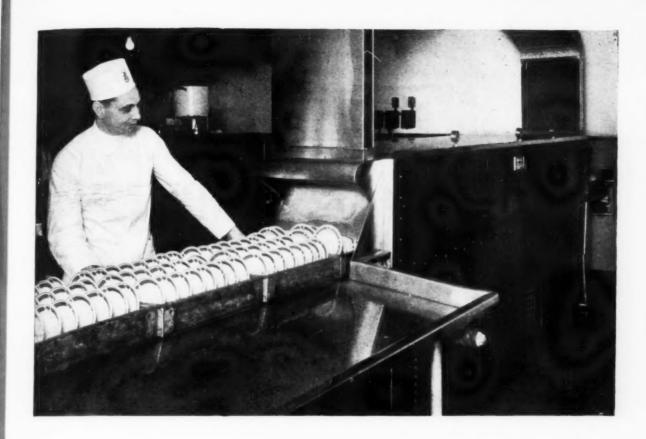
second, washed in the first compartment, which contains a solution of an alkali manual cleanser and 200 p.p.m. chlorine having a temperature of 110°-120° F. and third, immersed in a suitable bactericidal solution. The reason for the use of chlorine with the alkali cleanser is to prevent excessive bacterial contamination of the wash water. In sanitizing beer glasses, the residual beer on the glasses is removed by flowing water and the glasses are then immersed in the bactericidal solution. This is necessary because the small amounts of beer remaining on the glasses reduce the chlorine content of the sanitizing solution.

Solutions prepared from products containing chloramine-T have a slower bactericidal action than those prepared from hypochlorites containing an equal concentration of available chlorine. Thus these solutions must be made up to a sufficiently greater strength to produce an equal bactericidal effect within the required exposure period.

If hot water is used as the bactericidal agent, the temperature must be at least 170° F. and the period of immersion two minutes or one-half minute in boiling water. The pouring of scalding water over the washed utensils is not a satisfactory bactericidal treatment.

Machine Washing of Dishes

ISH washing machines may be divided into two groups, single and two or more tank machines. In the single tank machine, the washing solution is prepared in the tank and the cleansing operation consists in pumping this solution through the spray nozzles over the dishes after which the solution drains back into the tank. Following cleansing, the dishes are sprayed from above with hot water. In this operation the high temperature rinse water flows into the wash tank, overflowing the tank, diluting the washing solution and raising its temperature. This is not a satisfactory procedure and many manufacturers of single tank machines have equipped them with a chamber, which catches the rinse water and directs it to the sewer. In the two tank machine, the



first tank contains washing solution and the second the hot water rinse. In this type of machine, no dilution of the washing solution takes place and consequently the desired concentration of this solution can more easily be obtained.

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The American Public Health Association through its committees in the Engineering and Food and Nutrition Sections is actively engaged in studying dish washing machines, the detergent properties of alkalies and the development of a method for determining the bacteriological condition of utensils. Some of these studies are being subsidized by commercial interests under the direction of Cornell University with the work being carried on at New York State Agricultural Experiment Station. The Engineering Section committee (8) made a survey of dishwashing machines as operated in public eating establishments and reported a general lack of uniformity in turning out visually and bacteriologically clean dishes. This is due to lack of control of wash and rinse water temperatures, the time of exposure to

wash and rinse waters and the concentration of the detergent.

Gilcreas and O'Brien (9) evaluated detergents for machine washing of eating utensils and defined an efficient detergent for this use as one which at 120° F. will provide complete removal of all types of soil in a short period of time, will produce a free rinsing surface, will reduce to a minimum the formation of a film of precipitated mineral salts and will function effectively in waters of varying hardness.

The technic (10) for the bacteriological examination of food utensils was proposed for adoption as a standard method by the sub-committee on Food Utensil Sanitation of the Committee of Research and Standards of the American Public Health Association in October, 1943. It is recommended that the average plate count per utensil surface examined should not exceed 100. Higher bacteria counts are presumptive evidence of inadequate cleansing or bactericidal treatment or recontamination by handling or storage.

The Navy Department on March 15, 1943 issued Bureau of Ships Ad Interim Specification 51DS (Int) entitled "Detergent - Dishwashing." This specification gives the temperatures for the wash, rinse and final bactericidal sprays, the amount of detergent and the composition of the detergent within minimum and maximum limits. The following temperatures are required to be maintained during the operation of the machine:wash spray not over 130° F., rinse spray not less than 175° F. and final rinse spray not less than 180° F. The recommended amount of detergent is approximately 1 pound for each 25 gallons of wash tank capacity with the addition of one-half this amount every 20 minutes during the washing of tableware and should at all times be sufficient to give a pH 10 or above. The alkalies suggested in the composition are hydroxides, phosphates and silicates with carbonates optional.

The pertinent editorial in the May issue of Soap & Sanitary Chemicals on the subject of dishwashing is (Continued on Page 123)

SODIUM PHOSPHATES

By W. R. COREY, WAR PRODUCTION BOARD

THE sodium phosphates have gone to war and as a result, the demand for them is greater than at any time in the past. These products, which in normal times found their greatest outlet as cleansers and water softeners in the home, have now become indispensable in such vital war activities as the manufacture of high octane gasoline and synthetic rubber.

Their water softening properties and calcium and magnesium suppression ability as well as their detergent and buffering action make them adaptable to boiler water treatment in marine and stationary boilers, the cleaning of metal parts of airplanes and combat vehicles and even the washing of soldier's mess kits. Furthermore, they serve as the means for controlling the viscosity of oil well drilling fluids, are used in the production of dyestuffs and textiles and act as stabilizers for evaporated milk and as emulsifiers in process cheese.

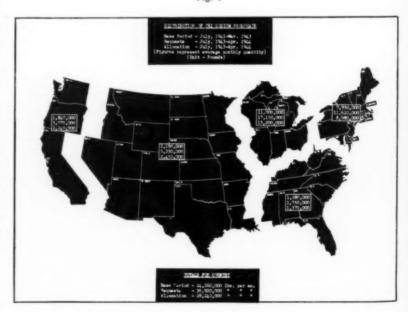
On the home front, it would be difficult to find an industrial plant that does not use a sodium phosphate or a household that does not purchase some cleaner containing a phosphate. Increased industrial activity, greater purchasing power and the shortage (for a time) of fats and oils have been outstanding factors in creating an unprecedented demand for alkalies and alkaline sodium phosphates. To illustrate this fact, the production of trisodium phosphate in 1933 was approximately 80,000 tons, in 1939 approximately 80,000 tons, in 1939 approxi-

mately 117,000 tons, in 1943, 166,000 tons, and the current rate of output is about 175,000 tons per year. Even with this increase, it is possible to satisfy only about 75 per cent of the demand.

Sodium phosphates are made by the reaction of phosphoric acid with soda ash and caustic soda. Two commercial processes are now used to manufacture phosphoric acid: one by acidulating phosphate rock with sulphuric acid and the other by oxidizing phosphorus to phosphoric anhydride with subsequent absorption in water. Since phosphate rock and sulphuric acid are generally readily available, raw materials are not a limiting factor in the production of sodium phosphates by the first process. Heavy military demands for elemental phosphorus, however, have curtailed the production of sodium phosphates made therefrom, causing a serious shortage particularly of tetra sodium pyrophosphate, sodium meta phosphate, sodium tetra phosphate and sodium tri poly phosphate.

Increased demand and decreased production made it necessary to place these four sodium phosphates, together with di and tri sodium phosphates, under complete allocation in July,

Fig. 1



1943 (General Preference Order M-334). Allocations are made primarily on the basis of end use. Because of their importance in the war program, certain of these end uses are being satisfied in full, such as direct and indirect military, oil well drilling, boiler water treatment and usage in foods and drugs. The many civilian uses are included under the general terms "other" and "resale" and requests are granted to the extent of a percentage of the applicant's average monthly consumption (or sales in the case of a distributor) during an established base period.

The widespread use of sodium phosphates both in industry and in the household makes information concerning their distribution of general interest. Production figures have been published for years by the U. S. Bureau of the Census, but actual distribution throughout the country has never been available. This is the type of information presented herein. Since tri sodium phosphate and tetra sodium pyrophosphate make up 80-85 per cent of the total production of the sodium phosphates under allocation, the presentation of distribution data at this time is confined to these two products.

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To best illustrate this distribution, the country has been divided into five sections. The first includes the New England and middle Atlantic

states as far south as Maryland; the second, the five mid-western states bounded by the Mississippi and Ohio Rivers; the third, the southeastern states west to the Mississippi; the fourth, the large western territory from the Mississippi to the Rockies; and the fifth, the three west coast states. Figure I covers tri sodium phosphate and Figure II tetra sodium pyrophosphate and show (1) base period consumption (2) requests for allocation, and (3) actual allocations. The figures do not necessarily represent 100 per cent ultimate consumption in each territory because sizable quantities are compounded and repackaged in one state for further distribution throughout the country. Furthermore, except where information is available to the contrary, it is assumed that material sold by a distributor was consumed in the state in which the distributor is located. Obviously, there is some overlapping from one state to another. Figures shown on the maps are average monthly quantities in pounds-the first representing consumption during the base period from July, 1941, through March, 1943; the second, requests for allocations from July, 1943, through April, 1944; and the third, actual allocations during the same period.

It will be observed that it was possible to satisfy approximately 75 per cent of the total demand for tri sodium phosphate during the first ten months of allocation although this represented about 116 per cent of the actual consumption during the 21 month base period that was established. Tetra sodium pyrophosphate has been far more critical and demand could be satisfied to the extent of only about 55 per cent of requests or 74 per cent of the actual consumption during the base period. The quantities available for end uses grouped as "other" which include soaps and detergents for civilian purposes were less than 74 per cent because this figure also includes end uses directly connected with the war which were allocated in full.

It is difficult to predict the supply stuation for the balance of 1944 since it is dependent to a great extent upon military demands. There are indications that tri sodium phosphate will ease gradually to the point where the supply may equal the demand. On the other hand, it is not expected that tetra sodium pyrophosphate and the other so-called "complex sodium phosphates" will show much improvement during the next few months although it is likely that current levels of allocation will be maintained.

Tall oil is treated to separate the fatty-acid components from the resin-acid components by esterifying the acids with a relatively high boiling alcohol. The fatty-acid esters only are trans-esterified with an alcohol having a lower boiling point than the first alcohol. The fatty-acid esters thus formed are distilled off. E. Segesseman, to National Oil Products Co. Canadian Fatent No. 421,002.

For persons with tender skin, tough beards, or both, an after-shave lotion is desirable in connection with the use of electric shaving devices. The following is suggested:

Liquid extract of

Fig. 2

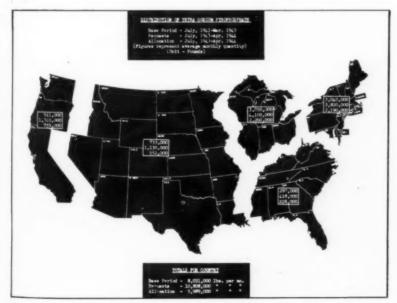




Photo by John Loughlin

The Way It Looks in Washington

C. H. JENKINS

HE big news from Washington this month for soapers seems to be that rosin will, in all probability, very shortly be placed under some kind of limitation order. Consumption continues at a rate well in excess of production, with a serious shortage obviously threatening. A meeting of the government agencies concerned was to be held in Washington, July 31 at which it was expected that proposals might be made for imposition of quotas and inventory controls on users. Where a few short months ago soap makers were being told that they must use certain minimum quantities of rosin in all soaps, they are now to be urged by the government to limit their use of rosin as much as possible.

While tall oil is still believed to be available in ample supply, it may be worth noting that the WFA has requested the cooperation of tall oil producers in seeing that users of small quantities in the manufacture of dryers, metal working compounds, and other such industrial specialties, get deliveries of the quantities they require before the more substantial orders of soap makers are filled. The WFA is obviously trying to avoid a situation such as developed some months back

in tallow,—when soap makers took such a big bite out of stocks that smaller users were handicapped in getting the quantities essential to their continued operation.

Overoptimism on Fats and Oils

A number of market watchers, including officials at WFA, believe that the oil and fat picture has been painted over recent months with a rather too rosy hue. They point out that the only really bright supply picture exists in lard, which of course, most soap makers cannot use because of the price differential. Even on lard the outlook is reported changing, with hog slaughtering currently registering a decline.

As to other 1944 fat and oil crops, the prospect is for distinctly smaller yields than from the 1943 bumper crops. Flaxseed production is off 50 per cent from 1943,—the current outlook being for a crop of only 26,000,000 bushels as compared with the record crop of 50,000,000 bushels in 1943. Production of corn oil, peanut oil, soybean oil, and cotton oil, it is also predicted, will be less this year than last. With such a more sobering view of market prospects, any hope for early relaxation of soap making quotas seems to be decidedly premature. Soap

makers can hope for continued small supplies of whole soybean oil, for use in the soap kettle, but for the bulk of their needs will have to continue to use foots and fatty acids.

Coconut Oil Outlook Dark

As for coconut oil, the potash soaper's most pressing problem today, the outlook is distinctly not good. Less is available for soap use in the third quarter than was released during either of the first two quarters of the year, and any soap maker who thinks that he can soon go back to making a swaight coconut oil soap is laboring under a delusion. Arrivals of coconut oil from India are reported to have dropped off due to labor shortages at copra collection points. There is understood to be a fair supply of copra and oil in some of the south Pacific islands where our troops have been operating, but up to this point the military authorities have not considered these areas sufficiently safe to allow commercial shipping in for loading. As to the prospect of our getting any South American babassu to relieve the shortage of high lauric acid oils, this hope seems to be distinctly lost so long as we in the United States operate under price ceilings while Europe bids the

going price for babassu. Needless to say, we would have been shipped plenty of oil under our one-way trade agreement with Brazil if the babassu price had gone down instead of up.

Extend Inventory Suspension

The WFA has extended through October 31 the current suspension on inventory limitations on tallow and grease. The suspension has been in effect since May 15, 1944.

Lard Again Released for Soap

Ex-quota lard for soap making has been shuttling back and forth this past month on an off again-on again hasis. The word first came out of Washington early last month that the WFA did not plan to extend past June 30 the ex-quota use of lard and rendered pork fat for soap making purposes. Then on July 17 it was announced that quota restrictions had again been removed on pork fat and lard purchased and delivered for soap making within the period July 17 through July 31. What the future status will be would seem to be decidedly uncertain.

Revoke Fish Oil Order

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War Food Order No. 60, regulating use and distribution of fish oil, was revoked as of July 3, terminating the previous controls on use of fish oil by soap makers and others.

Allow Alcohol Anticipation

The Chemicals Bureau of the War Production Board announced on July 20 that it would permit cosmetic manufacturers to anticipate during the third quarter of 1944 up to 50 per cent of their fourth quarter quotas for alcohol under Allocation Order M-30. The purpose is understood to be to permit these manufacturers to make use of added seasonal labor available during the summer months. No increase in fourth quarter quotas may be anticipated.

Amend Used Container Rules

MPR 529, regulating ceiling prices on used paperboard containers was amended by the OPA effective July 19, the amended version incorporating many of the suggested changes which it is hoped will encourage maxi-

mum return of used shipping containers to soap makers. The changes are reviewed as follows in a recent bulletin of the Association of American Soap & Glycerine Producers which was responsible for originating some of the suggestions:

A. To encourage the return of sorted small containers, a ceiling delivered price of 5c each, or an f.o.b. seller's premises' ceiling of 4%c each, is fixed where the ceilings by weight would be less than this amount.

B. To encourage the flow of containers to original users, the \$4 per hundredweight delivered ceiling on reusable or reconditioned containers, applicable to emptiers and dealers, will now be allowed only on sales to original users. Emptiers, of course, are those buyers of the merchandise originally in the containers who empty the goods out of the containers.

C. To encourage sorting of containers by the name of the original user, a delivered ceiling of \$3.50 per hundred-weight is established, applicable either to dealers or emptiers.

D. The \$3.75 per hundredweight ceiling on re-usable or reconditioned containers sorted by size is made applicable to sales by dealers only.

E. A "catch-all" group of re-usable or reconditioned containers is established to include any other sorted containers, at a ceiling of \$2.25 per hundredweight delivered. The 5c and 4%c maximum prices for small containers are not allowed in this group.

Continuing unchanged are the ceilings of \$2.25 per hundredweight for re-usable unsorted containers, and \$1.75 per hundredweight for repairable containers.

Report on Soap Exports

The War Food Administration has just released the following figures on exports of soap from the United States during the first five months of 1944. The totals include only soaps purchased by the WFA for projects which it sponsors, and are as follows:

January through May

 Lend-Lease
 17,164,534 lbs.

 Caribbean Emergency
 18,180,000 lbs.

 Program
 8,180,000 lbs.

 Cash Sales (Red Cross, etc.)
 3,196,005 lbs.

Bids Wanted on Overseas Soap

The government's reopening of bids on 100,000,000 lbs. of yellow laundry soap for overseas use was announced on July 11. On the first opening the quantity of soap offered was inadequate, and the WFA has asked that manufacturers who have not previously bid, or bidders who can increase the quantities offered, do so at once. Governmental assistance in get-

ting the necessary shipping containers has been promised.

Sims Leaves OPA

William L. Sims, II, of Orlando, Fla., and formerly an executive of Colgate-Palmolive-Peet Co., Jersey City, N. J., resigned as price executive of the Chemicals and Drugs branch of the Office of Price Administration, Washington, June 20. He had originally accepted the post only for a limited time, according to an OPA spokesman. Lester Chandler, price executive of the Rubber Branch, has assumed the added responsibilities of acting price executive of the Chemicals and Drugs branch.

Fat and Oil Outlook

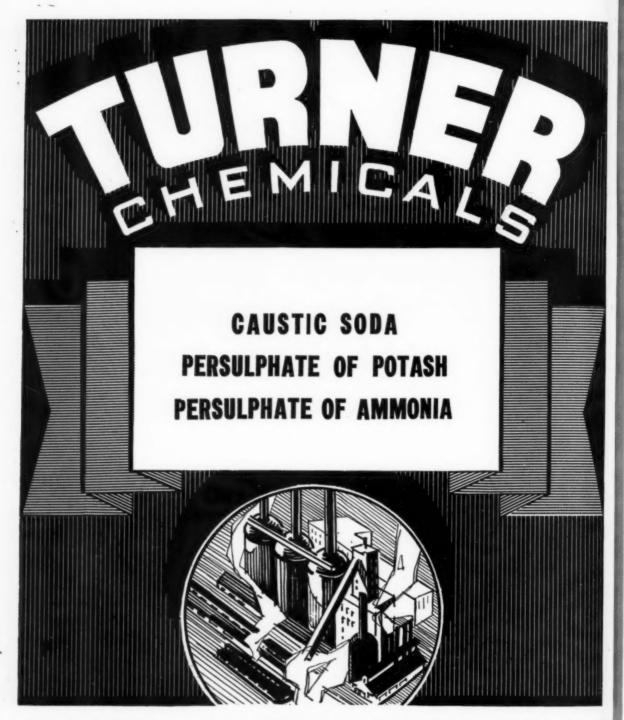
The following summary on the present fat and oil outlook, prepared by N. N. Dalton, fat and oil expert of the Association of American Soap and Glycerine Producers, has recently been distributed to soap makers as an association bulletin. It is emphasized that the market views are the personal opinions of Mr. Dalton on the basis of present conditions.

World fat shortages are indigenous to war periods on account of blockades, failure of transportation and consequent maldistribution, with accumulation of unmanageable surpluses in the heavy producing areas. As such surpluses grow and are unable to find markets, further production is discouraged and unavoidable excess supplies of oilseeds and oil are burned as fuel or otherwise destroyed. A world scarcity of fats is usually more in evidence after cessation of hostilities than during the actual fighting.

Fat Areas Under Jap Control

In World War I, the United States and most of Europe had free access to the palm, palmkernel, and coconut oils of the Philippines, the Dutch East Indies, and the Straits Settlements, the soya bean oil of Manchuria, the various vegetable oils of China, and the fish and marine animal oils of the Pacific. Prior to the present war, these areas annually exported about four billion pounds of oil or oil equivalent, most of which went to the densely populated low fat producing European nations. Other areas with fat surpluses, principally Africa, South America, India, and Oceania, named in the order of their importance, contributed most of the balance of prewar world fat exports. The usual exports from areas now under Japanese domination are practically lost to world consumption and will not be available until those areas are liberated and until production and transportation facilities are restored. Hence aside from other world fat surpluses, and recognizing the time factor in bringing the depleted live-

(Turn to Page 62)



JOSEPH TURNER & COMPANY

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TRADE EWS...

Sell Marseilles Soap Plant

The equipment of Marseilles Castile Soap Works, 383 West 12th St., New York, was sold at auction late in July, following the decision of Irving Sampson, former operator of the business, to suspend activities at least for the duration of the war. Mr. Sampson joined the Army two years ago and is serving as a Pfc. with the Military Police, being stationed at Trenton. The business has been operated since that time by his mother. Mr. Sampson indicates that he will reenter the soap field upon his release from the Army.

New Soap Assn. Bulletin

The Association of American Soap and Glycerine Producers has recently started publication of a new bulletin "Cleanliness and Health." Mailed to safety directors, health officers and industrial physicians, it makes useful suggestions as to the role of soap in promoting cleanliness and health.

Kelite Expands; Shifts Personnel

In expanding its laboratory research to include a wider range of chemical processing and cleaning, Kelite Products, Inc., Los Angeles, recently announced the advancement of Joseph H. Hart, formerly chief chemist, to laboratory director, and has increased the personnel of the laboratory. Others mentioned in the change were Meredith H. Fairchild, former analytic chemist, who was appointed chief chemist, and Donald W. Vance, who recently joined the Kelite organization, succeeds Mr. Fairchild as analytic chemist.

Conti Appoints Thompson

R. Donald Thompson has been appointed manager of Draper Soap division, Conti Products Corp., Brooklyn, N. Y., following Conti's purchase of Draper Soap Corp., Pawtucket, R. I.

Trade Group Elects Edlund

Roscoe C. Edlund, manager and secretary of the Association of American Soap & Glycerine Producers, New



ROSCOE C. EDLUND

York, has been elected to serve for one year as vice-president of the Trade Association Executives in New York City, it was announced late last month. Also elected a vice-president of the group was Lea S. Hitchner, secretary of the Agricultural Insecticide and Fungicide Association.

New Wrisley Hydrogenation Unit

A new hydrogenation unit recently installed at Allen B. Wrisley Co., Chicago, soap and toiletries manufacturers, was designed and installed by Wurster & Sanger, Inc., chemical engineers, consultants and contractors, Chicago.

Grit Soap Spec. Change

A new amendment to the Federal specification for grit cake soap was issued recently under the designation P-S-571a, amendment 2. It provides for the following changes in the specification: "Paragraph E-lk—total glycerol content shall not exceed 1.0 per cent of the weight of anhydrous soap contained in this product. The same phrase is inserted in sub-paragraph E-2j.

TGA Cancels Winter Meeting

The annual winter meeting of the scientific section of the Toilet Goods Association has been cancelled in an effort to cooperate fully with recent request of the Office of Defense Transportation to reduce transportation, it was announced last month. J. M. Williams, chairman of the scientific section and Dr. K. L. Russell, vice-chairman, are reported to have plans under way for interim activities to take the place of the meeting.

Award Shulton Display Prizes

Winners in the sixth annual Father's Day Window Display Contest, sponsored by Shulton, Inc., New York, for "Early American Old Spice" toiletries for men were announced late last month. First prize winner in Classification I (specialty shops and department stores) was L. S. Donaldson Co., Minneapolis, W. E. Ten Eyck, display manager who was awarded a \$400 War Bond. First place in Classification II (drug stores) was won by Parkway Drug Co., 2368 N. Clark St., Chicago, which also was presented with a \$400 War Bond. Two \$250 War Bonds for second place, and ten fourth prizes of \$25 in War Stamps were awarded to other prize winners in Classification I, while a second prize of a \$250 War Bond, a third prize of a \$125 War Bond and ten fourth prizes of \$25 in War Stamps were awarded in Classification II. This year's theme was: "For Father, the Skipper of the Family," and was intended to show the close relationship of the father to the home, whether on the home or fighting front.

Japs Like Our Soap

The following story, by Sergeant Jack Vincent, a Marine Corps Combat Correspondent, of Columbus, O., formerly of the Washington D. C., bureau of International News Service, was released early this month by the headquarters of the U. S. Marine Corps,

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Washington, D. C.: "Saipan, Marianas Island - (delayed) - Jap officers and soldiers on American-invaded Saipan Island were hoarding soap made in the United States. Marine patrols, mopping up areas behind the front lines, found evidence time and again that the Japs prized soap more than most of their other belongings. While most of their equipment was stuffed into their knapsacks in off-hand fashion, American-made soap in every case was carefully wrapped in waterproof paper and cloth. Famous U. S. soap trade names were seen on every hand. The Japs apparently had captured supplies of the soap in the early days of the war."

Markley Heads Canadian T.G.A.

Royal F. Markley, managing director of Northam Warren, Ltd., Montreal, and vice-president of Warren Industries, Ltd., Ville St. Laurent, Montreal, was recently named president of the Toilet Goods Manufacturers' Association of Canada. He has been an active member of the association for many years and a member of its executive committee since 1942. The appointment was made at the annual meeting of the Toilet Goods Manufacturers' Association recently in Quebec City.

Navy Advances Thompson

DeWitt Thompson, formerly assistant general manager of sales for Mathieson Alkali Works, New York, and a past president of the Salesmen's Association of the American Chemical Industry, was recently advanced to the rank of Lieut. Commander, U.S.N.R. He was commissioned by the Navy in 1942, on leave of absence from Mathieson, as a Senior Grade Lieutenant, and is now in service at the Naval Air Station, Terminal Island, Calif.

Offers S. African Market Service

John Barnard, market research specialist, 14 National Bank Building, 43 Rissik St., Johannesburg, South Africa, is offering his services and facilities in the development of postwar trade between South Africa, Rhodesia and the United States on general chemicals, toilet goods, cosmetics, etc.



Part of a new line of cosmetics recently introduced by Botany Worsted Mills, Passaic, N. J., is this box of three cakes of lanolin band soap that retails for 50 cents. The line is promoted especially for women with dry skin—which the company thinks is a market of about 85 per cent of all women. The soap and the other products are packaged in containers carrying a similar design—flowers of lavender, yellow and green.

Pittsburgh Glass Publicity Changes

Guy Berghoff, for the past ten years assistant glass advertising manager, has been appointed director of public relations for Pittsburgh Plate Glass Co., Pittsburgh, effective July 1. He will be assisted by Bryan England, who was named assistant director, at the same time.

A.O.C.S. Meets in Chi. Oct. 25

The 18th annual meeting of the American Oil Chemists' Society will be held in Chicago, Oct. 25-27 at the Hotel La Salle. J. J. Vollertson, of Armour and Co., Chicago, is general chairman. Papers to be presented at the meeting will cover the technology and manufacture of soap, edible vegetable oils, shortening, margarine, etc. The presiding officer will be Dr. Klare

S. Markley, principal chemist of the Southern Regional Research Laboratory, New Orleans, who was elected president of the Society at the annual spring meeting in New Orleans.

Assisting Dr. Markley in plans for the meeting are the other officers of the Society: R. R. King, Sherman, Tex., first vice-president, and technical director of Interstate Cotton Oil Refining Co.; S. O. Sorenson, Minneapolis, second vice-president, and di-



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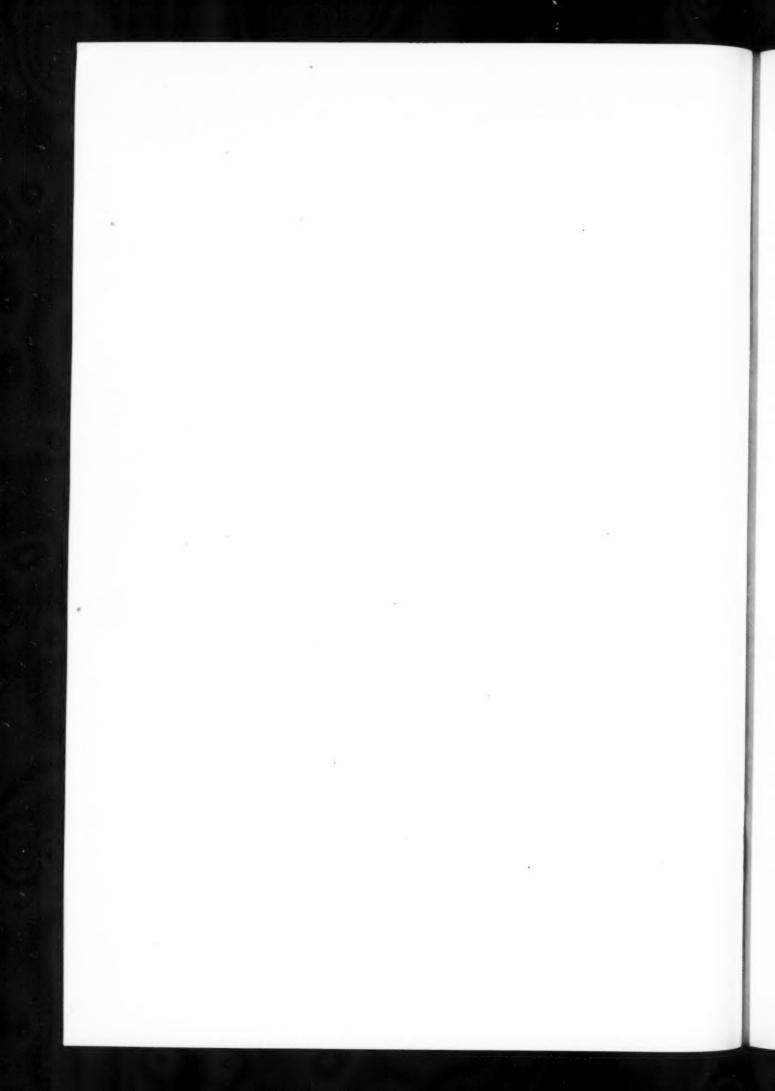
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ADVENTURES IN THE "MARGIN OF EXPERIENCE"



rector of the technical department for Archer-Daniels-Midland Co.; J. R. Mays, Jr., Memphis, third vice-president, and a member of the staff of Barrow-Agee Laboratories; Foster D. Snell, Brooklyn, fourth vice-president, and head of his own laboratories, and J. C. P. Helm, New Orleans, secretary-treasurer, and head of his own laboratory.

Soaper Aids Conservation

The efforts of one unnamed soap maker to aid in carton and paper conservation and re-use is told in a recent bulletin of the Association of American Soap & Glycerine Producers, Inc., New York. On a poster in which a soap carton is shown is printed: "I'm sorry, but I can't take your groceries home for you any more. To get groceries for you, we must return cardboard boxes to manufacturers." Copies of the poster will be displayed in food stores. In addition, this particular soaper, in his radio advertisements, stresses this and other conservation and re-use ideas. The Soap Association is asking other soapers to follow this and similar consumer conservation steps.

Mathieson Personnel Changes

H. P. Smith, formerly president of George Chemical Co., and Thomas T. Schulten, formerly with General Chemical Co. have been appointed field representatives of the New York office of Mathieson Alkali Works. Mr. Smith, a graduate of Columbia University, is said to have had wide experience in distributing and handling alkalies and other chemicals. Mr. Schulten, an alumnus of St. Mary's College, Kansas and the University of Virginia, was with General Chemical Co. for eight years. He has also pursued special studies at Brooklyn Polytechnic Institute.

Ruth Goldberg Joins Soap Assn.

Miss Ruth D. Goldberg, formerly with Procter & Gamble Co., Cincinnati, and more recently associated with Fairchild Publications, has joined the staff of the Association of American Soap & Glycerine Producers as special assistant to the manager, Roscoe C. Edlund.

Ransom Named Woburn Sales Mgr.

James Dudley Ransom was appointed sales manager of Woburn Chemical Corp., Harrison, N. J., July



JAMES D. RANSOM

10. He has been with the firm since 1934 and is a graduate in chemical engineering of Lehigh University, where he also received his Master of Science in Chemistry degree in 1927. Before going with Woburn, he was employed by Columbus Coated Fabrics Corp. as a chemist. He joined Woburn in 1934 as a research chemist on synthetic drying oils and specification fatty acids, later going into the sales department in 1937. He was made assistant sales manager to the Chemical Division in 1939 and became sales manager for that division in June, 1944.

Ban Lever Canadian Wage Rate

The Canadian National War Labor Board on July 21, refused Lever Bros., Ltd., Winnipeg, permission to introduce overtime rates for office workers. The company appealed to the National Board after its application had been refused by the Manitoba War Labor Board. The National Board upheld the opinion of the Regional Board that the overtime plan submitted was not sufficiently in operation in other Manitoba plants to warrant approval.

PPG Reemployment Program

H. B. Higgins, president of Pittsburgh Plate Glass Co., Pittsburgh, has just announced plans for a broad reemployment program under which the company will seek to put back to work after the war its 5,000 former employees now serving with the Armed Forces. The company's program, as announced in a series of letters to its ex-employees, their families and PPG plant superintendents, goes well beyond the legal minimums guaranteed by federal law in promising generous treatment to the company's returning service men.

Honor Fritzsche 50-Year Man

Ralph R. Redantz, assistant treasurer, Fritzsche Bros., Inc., New York, essential oil house, on July 15 became the third member of the company to achieve a service record of 50 years with the company. The other two executives holding this distinction are William A. Welcke, vice-president and treasurer, who reached the 50-year mark in 1935, and Frederick H. Leonhardt, president, who joined the select group in April of this year. Mr. Redantz joined Fritzsche Bros. in 1894 when the office, sales and factory force totaled little more than thirty employees. In the fifty years that have followed, he has seen the staff grow to nearly ten times its original number. His anniversary was celebrated with a banquet in the Jansen Suite of the Waldorf-Astoria hotel.

Conover Joins Sonneborn

J. N. Conover, formerly engaged in special sales work for Gallowhur Chemical Corp., New York, and before that for 19 years associated with Stanco Distributors, Inc., New York, recently joined the White Oil division of L. Sonneborn Sons, Inc., New York. He is acting as assistant to R. W. Bjork, sales manager of the division. Mr. Conover will make his headquarters in New York and will assist on sales and promotion of Sonneborn petroleum products.

Shulton Publicity Assistant Named

Shulton, Inc., New York, soap and toiletries firm, has appointed Miss Ruth Ann Bolway as assistant publicity director, it was announced recently.

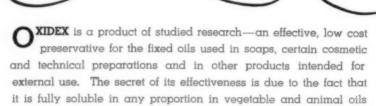
Danco Moves in New York

Gerard J. Danco, Inc., essential oils, have announced their removal on July 1, 1944, to 3 E. 44th St., New York 17.

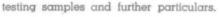


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Soaps at Toilet Goods Show

USINESS is good" was the D unanimous assertion of the more than 100 manufacturers of soaps, cosmetics, perfumes, and toilet accessories who exhibited their products at the third annual toilet goods show of the Chicago Associated Toiletries Salesmen, at the Palmer House, Chicago, July 6 to 14. Despite the 20 per cent luxury tax, women are buying more cosmetics than ever before, H. R. Adamson, vice president of the Association and chairman of the show committee, said. "After the first shock of the tax," he added. "it made little difference to the women. Considerable new business comes from the young girls whose work in war factories brings them plenty of money and enables them to patronize the beauty products counters."

Raw materials are now more freely available, but the shortage of containers is exercising a limiting effect on production volume. To meet this problem Hewitt Soap Co., Dayton, O., has developed a line of bulk soaps, the "Mary Lea" series, in six colors, six scents and three shapes, which are offered, largely in drug stores, without box or other wrapping. For their "Baby Castile," the Hewitt company designed a new wrapper to replace the foil previously used. And when they added a new odor and shade to their popular safety grip "Shower Bar," a new box was designed to make possible the offer of four cakes for \$1. Howard B. Stoner, vice president and sales director, had charge of the Hewitt exhibit, assisted by M. E. Gleason and Virgil Baughman.

In view of the paper box shortage, the Mem Co., New York, according to H. J. Tuteur, sales manager, is making considerable use of a cedar wood container which was adopted for packaging some of their toilet soaps shortly after this 60-year-old concern transferred operations from Vienna, to the United States in 1939. Stressing soap conservation, several of Mem's hand soaps for masculine use are shaped with concave surfaces to avoid waste

from soaking up water in the soap dish. Another feature shown was their line of brightly colored guest wafers, packed 10, 20, or 40 to a package.

How to continue production of their transparent toilet soaps under WPB limitations was a problem confronting Ferd Mulhens, Inc., New York, Morris B. Simpson, midwest distrct sales manager, said. A new clear "White Rose" cake was developed at the Jersey City, N. J., plant, to meet current conditions. Among other items featured in the Mulhens exhibit were superfatted soaps in different fragrances for dry skin and a line of medicated soaps for use on a physician's prescription.

Echoes of the great London blitz of four years ago were recalled in the space occupied by Herb Farm Shop of New York and London, whose midwestern representative, Thos. J. Frank, of Chicago, explained that the American company was established in 1939 and has been carrying on the organization's soap business since German bombs wiped out the parent company's London plant. Delicate soaps in five fragrances from English formulas supplement the herb treatments which this concern features. Hand size cakes, two and three to a box, and a deluxe bath size are offered.

South America soaps made with peanut oil, were featured by Murray Walker Associates, Chicago sales represenatives. Cleansing soaps, shampoos, pomades, hand lotions and other toilet items were shown, all made by Madam Eugene Marchado, of Buenos Aires, who entered the North American market with a New York shop at 9 E. 48th St., early this Spring.

Nutrine Beauty Preparations, Brooklyn, introduced a new "Ocean Foam" neutral lather oil at the Chicago show, as a supplement to their "Ocean Foam" liquid cream shampoo which was first presented at the 1943 Chicago show. The highly concentrated product is packaged in an attractive shaker bottle which has possibilities for reuse when emptied. Lewis Macy, president of Middlebrook & Lancaster, had charge of the presenta-

Alfred D. McKelvy Co., New York, has added a new liquid shaving soap and a new cream type hair dressing to their "Seaforth" line. Much in evidence was a pottery figurine, the "Little General," which has been designed as a takeoff on their Scotch Highlander trade mark design and is intended for dealer counter display purposes. H. C. Richardson, vice president and sales manager, V. I. Mora and E. W. Christensen, were in charge.

Hudnut, Inc., New York perfumers, are planning early production of a new toilet soap, "Yankee Clover," according to R. T. Barnes of the company's sales division. Only one toilet soap, the "Du Barry" line was displayed in their space.

Lightfoot, Schultz Co., New York, featured "Ariderma" dry skin soap and also displayed two recently new soaps, "Ruf-Cut" for men, retailing at four for \$2, and "Lightfoot's Perfumed Floating Soap," at \$1 a cake. Bert Lazerwitz, Chicago district manager, in charge.

"Blue Spruce" toilet sets for men, figured prominently in the Allen B. Wrisley Co. display, while also shown were their "Bath Superbe," "Oliv-ilo" and other soaps, "Wrisley" bath crystals and other items. A. R. Kopan, Illinois sales representative and H. W. Mundt, covering Michigan territory, in charge.

Deluxabath, Chicago, presented their line of bath crystals in heat-resisting glass containers designed for reuse as coffee serving decanters. Two, four and eight cup sizes were available. H. B. Piggott, in charge.

Milkmaid, Inc., New York, had a novelty bath mitten, filled with highly scented, powdered soap which retails at \$1.25 and also promoted their "Milkmaid" complexion soap, formulated with sweet pasteurized milk. D. D. Hess in charge.

Mathews Products Co., New York, was represented by the Elmer J. Engel Co., showing "Mathews" pine soap, "Sarong" soap and "Thermopine" bubble bath.

Other well known makers of toilet soaps in the big show, which tooking at a flower through fray eyes_

As the X ray penetrates to and through the

heart of a fragile flower, just so are the deli

skills and the long experience of Dow

technicians applied in seeking out the very essence

of floral beauty for many gromatic chemicals.

SYNTHETIC

AROMATICS

THE DOW CHEMICAL COMPANY, MIDLAND, MICHIGAN

Dow

CHEMICALS INDISPENSABLE TO INDUSTRY AND VICTORY

filled the Palmer House's seventh floor and overflowed to the eighth floor, included Lentheric, Inc., Luxor, Ltd., and the House for Men. Many cosmetic concerns also carried private brand soaps, bath crystals and similar items to round out their lines of toilet accessories, while numerous bubble bath makers were represented by various sales organizations.

Offer New Germicidal Soap

A new germicidal soap, known as "G-11," which it is claimed, actually kills bacteria on the skin, was described at the 56th annual meeting of the American Dermatological Association in Chicago in June. According to Dr. Eugene F. Traub of New York, the product was developed by a chemist for a cosmetic company. The material, he said, can be mixed with any toilet soap during its manufacture. It is inexpensive, odorless and nonirritating, he added. Two years of testing, he declared, have proven the product's value to surgeons, war workers exposed to irritating chemicals, food handlers, and the public generally.

P & G Outlines Container Program

How the Procter & Gamble Co. is striving to maintain volume of soap shipments despite the 20 per cent reduction in soap containers ordered by the War Production Board is described in the June issue of the company's house organ, "Moonbeams." Attacking the problem, packaging engineers designed containers for various sizes of bar soap, flakes and granules, says the article, so that shipping containers now have 36 instead of 24, or 90 instead of 60 packages. This move alone, it is estimated, has saved enough paper board to add approximately 14 per cent more containers to those allowed, thus making about 94 per cent of normal requirements available. Further to stretch the container supply a re-use program was started whereby each shipping carton is used twice or three times if possible. Dealers are being actively solicited to return shipping cartons to the factory in spite of the fact that this purchase and reconditioning costs more than new con-

Leonard Schultes Commissioned

Leonard H. Schultes, New York sales manager for Hewitt Soap Co. and son of Martin Schultes, man-



ENSIGN LEONARD SCHULTES

ager of the Hewitt New York office, has just been commissioned as an ensign in the U. S. Navy and has reported for active duty at Fort Schuyler, New York. Ensign Schultes, who is 30 years old, is a graduate of the Wharton School of Commerce & Finance, University of Pennsylvania, class of 1936. He joined Hewitt Soap Co. immediately thereafter and has been with the company ever since. He is married and the father of two daughters, eight and five years old.

Chicago Chem. Show Nov. 15-19

Plans are well advanced for the third National Chemical Exposition at the Chicago Coliseum, Nov. 15 to 19, the Chicago section of the American Chemical Society, sponsors of the affair, have announced. Discussions by nationally known scientists will cover recent new developments in applied chemistry and point out how chemistry may make it possible in the postwar period to improve products, control quality and lower production costs. Dr. H. E. Robinson, assistant chief chemist of Swift & Co., is chairman of the program committee for the exposition.

General chairman of the Society's show committee is M. H. Arveson, senior technologist of Standard Oil Co., of Indiana. Serving with him, in addition to Dr. Robinson are

R. C. Newton, Swift & Co.; Victor Conquest, Armour & Co.; C. S. Miner, Jr., Miner Labs.; Edw. Bicek, Illinois Institute of Technology; B. B. Schneider, Schneider & Dressler. Serving ex-officio on the committee is L. M. Henderson of Pure Oil Co., chairman of the Chicago section of the American Chemical Society.

Soap Rationing in Britain

Geoffrey Heyworth, chairman of Unilever, states that soap rationing has been a complete success in Britain. It is said to have worked smoothly and to have resulted in a reduction in the consumption of oils and fats for soap making. In 1942 the saving was 18 per cent, and in 1943 more than that. Interchange in manufacture of soap is reported to have brought about a huge saving in transportation.

Soap in Britain is plentiful for private use, but theft of soap from public places has become so common that railway wash rooms no longer carry towels and soap, and hotels and restaurants have either entirely banned the supply, or have only a limited amount available.

Soaps are now approximately one pence per pound higher in price, with the exception of some branded types which remain unchanged. A tendency has arisen among retailers to make conditional sales, whereby a housewife who buys a much-sought brand has to take something else. The latest legislation will make retailers who practice these forced sales liable to heavy penalties. Am. Perfumer 46, No. 5, 71 (1944).

Advertising Campaign for "Tech"

Tech Soap Co., Chicago, is conducting a special campaign in the hotel and institutional field for their "Tech" rug and upholstery shampoo for use in machines or for hand scrubbing.

Boston BIMS Golf Aug. 8

The BIMS of Boston have announced that their Tuesday, August 8, golf outing will be held at the Charles River Country Club instead of at the club first selected. The charge for golf and dinner is to be \$5.50, and for dinner only \$3.50.

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Post-war developers are taking a closeup view of PQ Soluble Silicates and their properties.

In the catalog of 50 grades are liquids, solids, and powders which range from 3Na₂O, 2SiO to Na₂O, 3.9SiO₂. The variety is worth remembering for they provide an interesting array of characteristics useful to the manufacturers of soaps and detergents. Take sodium

metasilicate, for instance. Do you have the pertinent facts of its properties and usefulness in private brand cleaning compounds? Bulletin 466 mailed free on request brings them to you.

You may already be working with a product which involves a sodium silicate. Then make use of our silicate of soda information service for data. PQ "know-how" of silicate manufacture and application technique has been accumulating for over 75 years. The many references to silicates in patents and literature in our files are a time-saver and help to investigators. This background is worth remembering too.

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William C. Hardesty (left) and S. J. Cohen (right) vice-president and president, respectively, of the newly formed Hardesty Chemical Co. Amecco Chemi-

Form Hardesty Chemical Co.

W. C. Hardesty Co., New York, and Amecco Chemicals, Inc., Rochester, have joined in the organization of Hardesty Chemical Co. for the production of sebacic acid, capryl alco-

Glover Toms River Plant Burns

The main plant of H. Clay Glover Co. at Toms River, N. J., was destroyed in a recent severe fire. Rebuilding was started as promptly as possible and meanwhile temporary manufacturing operations have begun at a site near the burned factory. The company was fortunate in having ra-



cals, Inc., Rochester, N. Y., with whom Mr. Cohen was formerly associated, joined with W. C. Hardesty Co. to form the new firm.

hol, dibutyl sebacate and related compounds. The new enterprise has offices at 41 E. 42nd St., New York. The two companies will continue, as heretofore, production and distribution operations in their respective fields.

ther heavy stocks of all its finished products in six warehouses in different parts of the country, so with the possible exception of the east coast where deliveries may be slow for the next few months, there will be no delay elsewhere in filling of orders for Glover products, which include animal remedies, soaps, etc.

Former Soap Writer Returns

From opposite ends of the earth, two former employees of Mac-Nair-Dorland Co., publishers of Soap & Sanitary Chemicals, returned recently to New York, after having served on various fighting fronts with the armed forces of the United States. From the Southwest Pacific, after one and a half year's active duty with the Navy, came Lt. (s. g.) Stephen H. Dole, U.S.N.R., who, prior to receiving his commission as an Ensign two years ago, was a member of the editorial staff of Soap & Sanitary Chemicals for two years. A communications officer, Lt. Dole, who received his promotion to Lieutenant, Senior Grade, early this month, has been selected to take an advanced course in radio training at the U. S. Naval Academy, at Annapolis, Md. He was flown back from his post in the Southwest Pacific.

Another MacNair-Dorland employee to return from the fighting front is John C. Vollmuth, who was flown back from England early in the month, after having been listed as "missing in action" for four months. He holds the rank of Second Lieutenant in the United States Army Air Forces and was a bombardier on a Flying Fortress. Before joining the Armed Forces he was in charge of the M-D Co. mailing department.

New Plant for Peck's Products

Peck's Products Co., St. Louis, manufacturers of soaps and sanitary products, has just acquired a new plant a short distance from its former quarters at 5224 N. Second St., and is installing equipment which will make possible a substantial expansion in production. The new plant offers an available 100,000 sq. ft. of floor space, the various buildings ranging from one to three stories in height. Adequate railroad facilities are available, and the new quarters offer additional ground for future expansion.

The Peck organization was started by G. S. Peck in 1918. Mr. Peck, whose original training in soap manufacture was obtained in Germany, is still the active head of the concern. A. G. Peck who received his training in chemical engineering at the Univer-



sity of Missouri and Washington University of St. Louis, is vice-president. The treasurer of the company, L. G. Peck, who also graduated from the University of Missouri, was active in sales promotion and personnel work before he went on leave in 1941 to join the U. S. Army. He is now serving in

the European theatre. M. M. Peck is secretary of the company and L. W. Peck, assistant secretary. The latter, who was in the sales promotion department following his graduation from Westminster College in 1943, is now on leave and serving with the U. S. Naval Air Corps.

1944

Good Neighbor for 60 Years!



BIDS AND AWARDS

Navy Rust Preventive Bids

In a recent opening for miscellaneous supplies by the New York Navy Yard, N. Y., Crystal Soap & Chemical Co., Phila., entered a low bid of 7.25c on 4,000 pounds of thick film, rust preventive compound. Other bidders included Fort Washington Chemical Products Co., Ft. Washington, Pa., 8.4c; Presstite Engraving Co., St. Louis, 10.5c; and Dearborn Chemical Co., Chicago, 12.95c.

Dry Cleaning Fluid Bids

Among the low bids received in a recent opening for miscellaneous supplies by the New York Navy Yard, New York, were the following on 26,000 gallons of dry cleaning fluid (solvent): Gulf Oil Corp., New York, 21.5c, including 473 returnable drums at O.P.A. ceiling price in effect whenever the drums are returned; Socony-Vacuum Oil Co., New York, 15c, plus \$10 deposit per drum; Shell Oil Co., New York, 19.5c, including 520 returnable drums at O.P.A. ceiling price in effect on date drums are returned; W. J. Sutcliffe Co., E. Rutherford, N. J., 21.3c, including 520 returnable drums at \$1 each; Air Pilot Oil Co., Secaucus, N. J., 22c, including 473 returnable drums at \$1 each; Paragon Oil Co., Brooklyn, 23.2c, including 400 returnable drums at \$1 each; and Globe Solvents Co., Philadelphia, 30.2c, including 472 returnable drums at \$1 each.

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Standard Low on Soap Paste

Standard Soap Co. of Camden, N. J., was the low bidder, with 6c in 55-gallon drums weighing about 500 pounds each, on 5,200 pounds of soap paste for liquid soap in a recent opening for miscellaneous supplies by the New York Navy Yard, New York. Other bidders included Crystal Soap & Chemical Co., Philadelphia, 14.2c; Harley Soap Co., Philadelphia, 16c, packed 12/5 pound cans in commercial carton, or 18c, packed 12/5 pound

cans in wooden cases; Clifton Chemical Co., New York, 18c, in 25 pound cans; Unity Sanitary Supply Co., New York, 29c; and R. M. Hollingshead Corp., Camden, N. J., 14.50c.

Navy Soap Awards

The following awards have been announced in a recent opening for miscellaneous supplies by the U. S. Navy Bureau of Supplies and Accounts, Washington, D. C.: Swift & Co., Chicago, lot 1, item 1f, 384,000 pounds of soap powder at 4.44c; Procter & Gamble Distributing Co., Cincinnati, lot 1, item 1f, 570,375 pounds of soap powder, 3.68c; Spazier Soap & Chemical Co., Santa Monica, Calif., lot 6, item 1a (unspecified quantity of 1,-701,000 pounds of laundry soap), 9.7c; Pacific Soap Co., Los Angeles, lot 2, item 1 (unspecified quantity of 7,595,-428 pounds of soap powder), 4.09c; lot 4, item 1 (unspecified quantity of 1,420,000 pounds of soap powder), 5.65c; lot 6, item 1 and 1a, 10.5c; and Cleveland Soap Manufacturing Co., Cleveland, lot 5, item 1 (unspecified quantity of 25M pounds of laundry soap), 9.85c; lot 6, item 1a, 9.85c.

N. Y. Navy Floor Wax Bids

The following bids have been announced on 6,000 gallons of water emulsion floor wax in a recent opening for miscellaneous supplies by the New York Navy Purchasing Office, New York; Oil Specialties & Refining Co., Brooklyn, 68.8c, including 120 returnable drums at \$2.75 each; Buckingham Wax Co., Long Island City, N. Y., 69c; R. M. Hollingshead Corp., Camden, N. J., 75c in car lots or 73c in less than car lots, including returnable drums at \$1.25 each; Fuld Bros., Baltimore, 75c including 120 returnable drums at \$1.10 each; Penetone Corp., Tenafly, N. J., 77.5c, including 120 returnable drums at \$2.20 each; A. L. Cahn & Sons, New York, 79.5c, including 120 returnable drums at \$1.25 each; Windsor Wax Co., Hoboken, N.

J., 89c, including 120 returnable drums at \$1.25 each; Industrial Distributors, New York, 93.5c, including 120 returnable drums at \$5 each; Uncle Sam Chemical Co., New York, \$1.25, including 120 returnable drums at \$1.25 each; C. H. Tiebant & Sons, Brooklyn, \$1.10; E. Rabinowe & Co., Yonkers, N. Y., \$1.10, including 120 returnable drums at \$1 each; and S. C. Johnson & Son, Racine, Wis., bidding through distributors, J. B. Farnum & Co., Woonsocket, R. I., \$1.09.

Hollingshead Liquid Soap Bid

R. M. Hollingshead Corp., Camden, N. J., submitted a bid of 37.5c on 2,200 gallons of liquid soap in a recent opening for miscellaneous supplies by the Government Printing Office, Washington, D. C. It was the only bid received in the opening.

N. Y. Navy Wax Bids

Among the bidders in a recent opening for miscellaneous supplies by the New York Navy Purchasing Office, New York, on 2,000 pounds of wax compound were: Socony-Vacuum Oil Co., New York, 5.96c; S. C. Johnson & Son, Racine, Wisc., 16.5c; and Zophar Mills, Brooklyn, 16c.

Plastic Polish Bid

Park Chemical Co., Detroit, submitted a bid of 95c a gallon on 2,100 gallons of cleaner and polisher for plastics in a recent opening for miscellaneous supplies by the Philadelphia Aviation Supply Office, Philadelphia.

WFA Fats and Oils Report

"Marketing Activities," a publication of the War Food Administration, Washington, D. C., contains in its June, 1944, issue a report on the fats and oils situation by Emmett Snellgrove. Discussed in this article are such questions as; "How does a fat differ from an oil?," How did Pearl Harbor affect the U. S. fats and oils situation?," With many meats off ration points, need housewives continue to salvage kitchen fats?" These questions and many others are answered in this story of the War Food Administration's work in this commodity group.

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NEW RADE MARKS

The following trade-marks were published in the July issues of the Official Gazette of the United States Patent Office in compliance with Section 6 of the Act of September 20, 1905, as amended March 2, 1907. Notice of opposition must be filed within thirty days of publication. As provided by Section 14, fee of ten dollars must accompany each notice of opposition.

Trade Mark Applications

AGISHEL—This is bold, upper case letters for carrier for insecticides. Filed Apr. 6, 1944, by Agicide Laboratories, Inc., Racine, Wis. Claims use since Feb. 6, 1942.

B. W. C.—This in extra bold, upper case letters for cleaning material. Filed Nov. 8, 1943, by Wyandotte Chemical Corp., Wyandotte, Mich. Claims use since Aug. 3, 1939.

F-100—This in upper case, extra bold letters for floor and wall cleaning preparation. Filed Nov. 8, 1945, by Wyandotte Chemicals Corp., Wyandotte, Mich. Claims use since May 31, 1939.

S. I. FLAKES—This in upper case, extra bold letters for bottle, etc., cleansing material. Filed Nov. 8, 1943, by Wyandotte Chemicals Corp., Wyandotte, Mich. Claims use since July 21, 1938.

Powder Aid—This in upper case, bold letters for shampoo. Filed Mar. 24, 1944, by Associated Distributors, Chicago. Claims use since Jan. 8, 1941.

GOLDEN LILY HAIR PREPARA-TION—This in upper case, medium letters for hair preparation. Filed Mar. 28, 1944, by Jessie Troop, Chicago. Claims use since Sept. 1, 1939.

D'SAPEER—This in upper case, open letters for deodorant for the clothing and the home. Filed Mar. 29, 1944, by D'Sapeer Co., Kalamazoo, Mich. Claims use since Oct. 19, 1943.

Mag-Spray — This in upper case, extra bold letters for agricultural lime for spraying and dusting. Filed

Mar. 31, 1944, by The Kelley Island Lime and Transport Co., Cleveland. Claims use since Mar. 17, 1944.

PRO-TEX—This in extra bold, black upper case letters for insecticide and fungicide. Filed Apr. 3, 1944, by Central Chemical Corp., Everett, Pa. Claims use since May, 1937.

SOYTEX — This in very bold, upper case letters for insecticide and fungicide. Filed Apr. 3, 1944, by Central Chemical Corp., Everett, Pa. Claims use since May, 1942.

ANADERMA—This in upper and lower case, bold letters for toilet soaps. Filed Dec. 14, 1943, by Lightfoot Schultz Co., New York. Claims use since Dec. 8, 1943.

TRADE WINDS—This in upper and lower case script letters for shaving soap. Filed May 25, 1944, by Trade Winds, Ltd., Los Angeles. Claims use since Feb. 22, 1944.

DREFT—This in lower case, extra bold letters for sudsing cleaner. Filed Apr. 22, 1944, by Procter & Gamble Co., Cincinnati. Claims use since Oct. 10, 1933.

ROCH-NO—This in upper case, extra black bold letters for insecticide. Filed Feb. 3, 1942, by Plunkett Chemical Co., Chicago. Claims use since June 1, 1920.

PIED PIPER—This in upper and lower case letters above the fanciful drawing of the legendary character of the same name for rat and roach exterminator. Filed Mar. 17, 1944, by De Pree Co., Holland, Mich. Claims use since June 5, 1922.

WHAM—This in upper case shadow letters above the fanciful drawing of a gnome hitting an insect with a mallet for insecticide. Filed Mar. 24, 1944, by Fred Staffel Co., San Antonio, Tex. Claims use since Dec. 20, 1943.

LINE-X—This in extra black bold, upper case letters for bleach, germicide and cleanser. Filed Apr. 10, 1944, by Silver Seal Products of America, Barnsdall, Okla. Claims use since Nov. 24, 1943.

JNT-This in very bold, black letters for fabric spot remover and cleaner; stain remover; moth resistant rug and upholstery cleaner; automobile wax cleaner; metal and silver polish; and shoe cleaner and whitener. Filed Dec. 29, 1943, by JNT Manufacturing Co., New York. Claims use since June 18, 1934, for stain remover and metal polish; June 19, 1939, on moth resistant cleaner; Sept. 16, 1943, on automobile wax cleaner; Sept. 3, 1937, on fabric spot remover and cleaner; June 1, 1938, on shoe cleaner and whitener; and Sept. 27, 1943, on silver and metal polish.

GRIP-Tex—This in extra bold, stencil letters for gritty powder to remove slipperiness of floors. Filed Mar. 23, 1944, by Walter G. Legge Co., New York. Claims use since Mar. 1, 1938.

Cosmakleen—This in upper and lower case medium letters for lens cleaning preparation. Filed Mar. 31, 1944, by Cosmet Co., Minneapolis. Claims use since Mar. 16, 1944.

FIJ-OIL—This in upper case, extra bold, black letters for hair and scalp shampoo. Filed May 26, 1943, by Consolidated Hair Goods Co., Chicago. Claims use since Apr. 1, 1934.

REX-O-GRAPH—This in extra bold, upper and lower case, black and script letters for cleansing cream for removing hectograph carbon, ink and ribbon stains from the hands. Filed Apr. 9, 1943, by Rex-O-Graph, Inc., Milwaukee. Claims use since July 3, 1934.

STAR 5X—This in upper case bold letters for general washing and cleansing preparation. Filed Dec. 3, 1943, by Wyandotte Chemical Corp., Wyandotte, Mich. Claims use since Oct. 1, 1943.

BARNESITE—This in upper case, black, bold letters for lens cleaning preparation. Filed Dec. 16, 1943, by W. F. and John Barnes Co., Rockford, Ill. Claims use since Aug. 31, 1943.

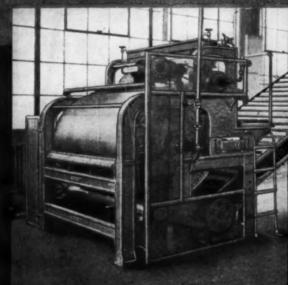
ZET—This in upper case, extra black, bold letters for household cleanser in the form of scouring pads. Filed Mar. 29, 1944, by Zet Cleaning Pad Co., Wildwood, N. J. Claims use since Mar. 2, 1944.

COPPER CLAD—This in upper and lower case, bold letters for metal

1944

Sargent's latest ... SOAP CHIP DRYER





- YOU will be interested in seeing two views of a recent installation of the latest SARGENT Dryer and Chilling Roll as set up and operating.
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- The drives are of the variable speed control type. Designed for compactness and accessibility. The unit requires only the minimum of steam and power.
- Write to SARGENT today for complete information on this new machine.

C. G. SARGENT'S SONS CORPORATION . GRANITEVILLE, MASSACHUSETTS

cleaner. Filed Apr. 18, 1944, by Copper Clad Products Co., Rome, N. Y. Claims use since Mar. 21, 1944.

BOUFFONT—This in upper and lower case, extra bold, script letters for scented garment cleaner. Filed Apr. 26, 1944, by Williams Co., Kokomo, Ind. Claims use since July 6, 1942.

SWANEE — This in upper and lower case, extra bold, black script letters for hand protective cream. Filed Apr. 24, 1944, by Edward M. Halpern, Newark, N. J. Claims use since Nov., 1943.

STARATS—This in upper case letters running around the outer edges of a star for rat killer. Filed Apr. 26, 1944, by Schutte Laboratories, Beaver Falls, Pa. Claims use since Mar. 25, 1944.

ODOKIL — This in lower case, extra bold, black letters for kitchen deodorant. Filed Apr. 27, 1944, by Lucident Co., Elizabeth, N. J. Claims use since Jan., 1944.

Trade Marks Granted

407,454. Dry cleaners and soaps. Filed by Nomayde Co., Brooklyn, Dec. 8, 1943. Serial No. 465,624. Published Mar. 28, 1944. Class 4.

407,456. Tooth powder. Filed by Frank Keever, New York, Dec. 10, 1943. Serial No. 465,682. Published Mar. 21, 1944. Class 6.

407,465. Product used for treating scale and corrosion. Filed by D. W. Haering & Co., Chicago, Dec. 16, 1943. Serial No. 465,832. Published Mar. 21, 1944. Class 6.

407,494. Toilet soaps. Filed by Campana Sales Co., Batavia, Ill., Jan. 1, 1944. Serial No. 466,251. Published Mar. 28, 1944. Class 4.

407,496. Quaternary ammonium antiseptic compound. Filed by Onyx Oil & Chemical Co., Jersey City, N. J., Jan. 4, 1944. Serial No. 466,308. Published March 14, 1944. Class 6.

407,510. Insecticide. Filed by Socony-Vacuum Oil Co., New York, Jan. 12, 1944. Serial No. 466,517. Published March 21, 1944. Class 6.

407,515. Lanolin substitute. Filed by Vejin, Inc., Cincinnati, Jan. 14, 1944. Serial No. 466,598. Published March 21, 1944. Class 6.

407,519. Boot and shoe polish. Filed by General Shoe Corp., Nashville, Tenn., Jan. 19, 1944. Serial No. 466,-695. Published March 28, 1944. Class 4.

407,609. Insecticidal preparations. Filed by Whitmire Research Laboratories, St. Louis, Dec. 31, 1943. Serial No. 466,246. Published March 28, 1944. Class 6.

407,632. Soap. Filed by Procter & Gamble Co., Cincinnati, Feb. 18, 1944. Serial 467,537. Published Apr. 4, 1944. Class 4.

407,664. Germicide. Filed by Albert Laboratories, Chicago, July 12, 1943. Serial No. 461,995. Published Apr. 4, 1944. Class 6.

407,678. Cleaning and polishing compound. Filed by Servel, Inc., Evansville, Ind., Oct. 20, 1943. Serial No. 464,274. Published Apr. 11, 1944. Class 4.

407,691. Cleansing material. Filed by Wyandotte Chemicals Corp., Wyandotte, Mich., Dec. 3, 1943. Serial No. 465,496. Published Apr. 4, 1944. Class 4.

407,706. Repellents for rodents and insects, insecticides, fungicides, herbicides, rodenticides and bactericides. Filed by Nuguard Chemicals, Inc., East Paterson, N. J., Jan. 6, 1944. Serial No. 466,361. Published Apr. 4, 1944. Class 6.

407,711. Soap for washing dishes, etc. Filed by Charles Bain, Philadelphia, Jan. 14, 1944. Serial No. 466,566. Published Apr. 4, 1944. Class 4.

407,713. Shoe polish. Filed by Beau Brummel Polish Co., Worcester, Mass., Jan. 26, 1944. Serial No. 466,-876. Published Apr. 4, 1944. Class 4.

407,752. Dentifrice. Filed by Boyxgen Labs., Ltd., Toronto, Ontario, Canada, Mar. 4, 1942. Serial No. 451,-403. Published Aug. 25, 1942. Class 6.

407,776. Foam bath. Filed by Allied Toiletries, Inc., Philadelphia, Nov. 8, 1943. Serial No. 464,804. Published Apr. 11, 1944. Class 6.

407,779. Rust remover and preventive. Filed by Machinery Supplies Co., New York, Nov. 25, 1943. Serial No. 465,298. Published Apr. 11, 1944. Class 6.

407,784. Insecticides, specifically ant poison. Filed by McKesson & Robbins, Inc., New York, Dec. 13, 1943. Serial No. 465,743. Published April 11, 1944. Class 6.

407,920. Odor neutralizer. Filed by Household Products, Inc., Stamford, Conn., Feb. 7, 1944. Serial No. 467,230. Published Apr. 18, 1944. Class 6.

407,952. General household washing powder. Filed by Kelite Products, Inc., Los Angeles, Feb. 10, 1943. Serial No. 458,462. Published May 2, 1944. Class 4.

407,957. Shaving cream. Filed by Custom Co., Los Angeles, Sept. 6, 1943. Serial No. 463,244. Published Apr. 25, 1944. Class 4.

407,971. Cleaning and detergent material, particularly adapted for laundry and textile use and industrial metal cleaning. Filed by Wyandotte Chemical Corp., Wyandotte, Mich., Dec. 28, 1943. Serial No. 466,132. Published Apr. 25, 1944. Class 4.

407,990. Washing powders. Filed by Murphy Chemical Corp., New York, Jan. 28, 1944. Serial No. 466,-947. Published Apr. 25, 1944. Class 4.

408,012. Soap and cleansing compound. Saftey Cleanser Co., Saginaw, Mich., Feb. 19, 1944. Serial No. 467,583. Published Apr. 25, 1944. Class 4.

408,013. Floor cleaning compound. Filed by C. A. Nach, Inc., Norfolk, Va., Feb. 21, 1944. Serial No. 467,615. Published May 2, 1944. Class 4.

408,022. Soap. Filed by Lucien LeLong, Inc., Chicago, Mar. 2, 1944. Serial No. 467,928. Published May 2, 1944. Class 4.

408,048. Permanent hair waving neutralizer and shampoo. Filed by National Mineral Co., Chicago, Nov. 25, 1942. Serial No. 457,039. Published May 2, 1944. Class 6.

408,049. Carrier for insecticides. Filed by Agicide Laboratories, Inc., Milwaukee, Feb. 4, 1944. Serial No. 458,321. Published May 9, 1944. Class 1.

408,081. Polish for woodwork, automobiles, floors, furniture, etc. Filed by Camac Co., Cambride, Mass., Jan. 22, 1944. Serial No. 466,780. Published Apr. 25, 1944. Class 16.

1944

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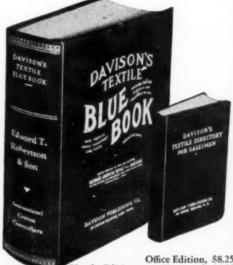
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RAW MATERIAL MARKETS

As of July 27, 1944

N spite of the easing of restrictions on some fats and oils, continuing reports of a high rate of production of lard and rendered pork fat and some other oils, as well as instances of oils being offered below ceiling prices, there is a tone of caution beginning, for the first time in many months, to creep into discussions of the fats and oils outlook. So far, officially it hasn't manifested itself in a direct, positive way, although the handling of the rosin situation might be said to be an exception. The rosin outlook, rather more fully reported in another section of this issue, is giving Washington officials cause for concern. Factually, rosin was used for soap making in greater quantity in the past naval stores year, ended Mar. 31, than in any other year. With

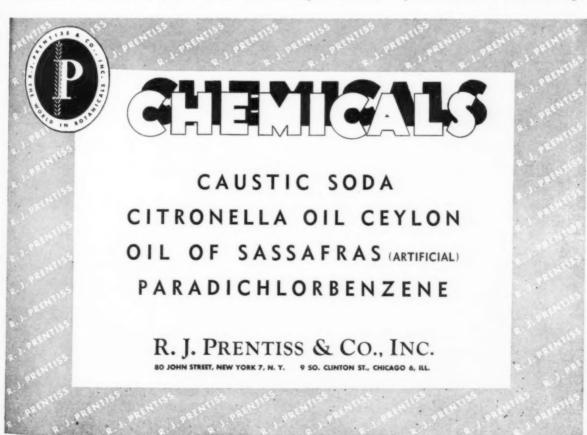
tallow short, pressure was exerted on soapers to use more of this material in soap formulae. An order formally requiring fixed percentages of rosin in soap was issued about six months ago and revoked late last month, a pretty good indication of what Government people thought of the supply situation. Rising rosin prices, again indicative of enlarged demand and shortened supply, required the issuance during the month of a schedule of price ceilings for the various grades. With production and stocks down, and demand up, it seems fairly evident that some sort of restrictive action on rosin consumption will be forthcoming before long.

Another omen of a tightening situation in the supply of fats and oils is the passing of peaks in the production of lard and the slaughter of cattle. Already word that meat will grow shorter in supply is beginning to be passed out. Although lard as a soap raw material is not of prime importance, it was useful when other materials were short. And coupled with the fact that tallow won't become more readily available and rosin is tight, the supply picture is quite sobering.

On the more optimistic side, although believed to be exceptional, are stories of "below-ceiling-prices-sales."

Lard, Lanolin Below Ceilings

In the most recent issue, the U. S. Department of Agriculture's paper, Fats and Oils Situation, tells of the sale, early in May, of lard at prices falling below ceiling levels. Specifically, the published quotation on May 8, for prime steam lard in store at Chicago,



, 1944

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in tank car lots, was reported to be 12.0c per pound, 0.8c under the ceiling price. Other sales were reported at even lower prices. Grease and linseed oil, likewise, were reported to have sold at slightly reduced prices in May. Lanolin was advertised in New York on July 14, at prices ranging anywhere from 2½c to 4c below ceiling prices. The following quotations were offered:

Grade	OPA Ceiling	
Cosmetic Grade Lanolin USP	.35	.31
Pharmaceutical Grade Lanolin USP		.30
Technical Lanolin	.31	.28
Neutral Wool Grease less than 2% FFA		.26
Neutral Wool Grease Over 2% FFA		.25

Lift Pork Fat Bans

Quota restrictions were removed on the use of rendered pork fat and lard which are purchased and delivered for soap making within the period July 17, through July 31, 1944, the War Food Administration announced July 17. The

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move, effected in an amendment to War Food Order No. 42, is similar to that of last May, when quota restrictions on lard and rendered pork fat were removed from May 15, through June 30. Both lard and rendered pork fat have been available to soap makers since late in February, but their use (except for the quantities purchased and delivered between May 15 and June 20, inclusive) has been subject to the quota restrictions of WFO 42.

Coconut Drum Sale Ceilings

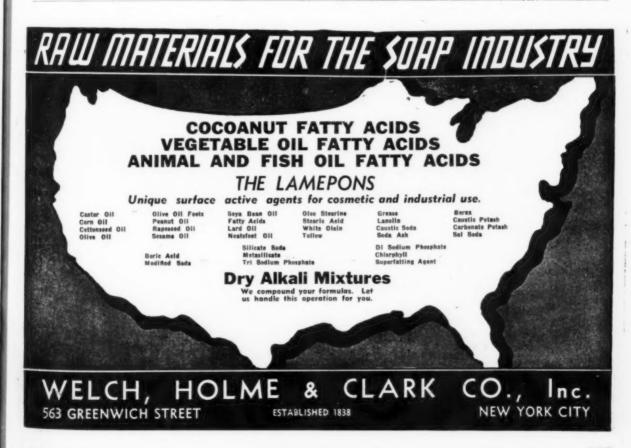
Sellers of coconut oil effective July 17, may add to bulk ceiling prices the following differentials for drum sales of coconut oil in cents per pound, when they ship in returnable drums: carlots, 0.5c; carlots in more than one delivery of 10 drums each, 0.7c; five to nine drums, one delivery, 1.1c; and one to four drums, one delivery, 1.5c. When shipped in non-returnable drums, 0.5c per pound may be added to the ceilings for shipments in returnable drums. The bulk ceiling for coconut

oil, c.i.f., U. S. ports are: Manila crude, 8c, Pacific Coast, and 8.35c, New York; Ceylon crude, 8.50c, Pacific Coast, and 8.85, New York; and Cochin type, 9c, Pacific Coast and 9.35c, New York.

With more shipping space available from South America for beeswax and carnauba, with the possibility that we may soon import these waxes from India and Turkey, and with import restrictions on the waxes lifted, an adequate supply for all military and civilian needs is now available, the Chemicals Bureau of the W.P.B. announced July 12.

Van Pels Opens Own Office

Max van Pels, formerly of the New York office of Stauffer Chemical Co., and for over thirty years connected with the chemical field, has opened offices recently at 441 Lexington Ave., New York, for the importation and exportation of drugs, chemicals, botanicals, gums, etc.





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PRODUCTION SECTION

Modern Fat Splitting Methods

N fat splitting it is highly desirable for the reaction to take place in one phase in accordance with the theory that all hydrolytic reactions are homogeneous, proceeding in a single phase and not at the interface of emulsified droplets. For homogeneous reactions the rate generally increases 2 or 3 times for a 10° C. rise in temperature. In commercial processes the necessity of completing the operation in a minimum of time has led to the use of the highest temperatures practicable in order to take advantage of the greater speed of reaction, regardless of a possibly unfavorable shift in the reversible equilibrium. It has been found possible to cut the operation time from 12-18 hours to 21/2 minutes.

Modern fat-splitting processes obtain high yields of glycerine by working with the right proportions of water to fatty oil and operating in such a way that the products of hydrolysis are removed, thereby putting the system out of balance and causing the equilibrium point to shift in the required direction. This can be done by obtaining a 60-70 per cent glycerine yield in the first stage, and a 98-99 per cent yield in the second stage.

Continuous Processes

In recent years chemical engineers have endeavored to substitute continuous processes for batch operations wherever possible. The main advantages are: (1) smaller equipment required for the same output: (2) more accurate and automatic control; and (3) a product of homogeneous characteristics.

Along with the effort to make the process a continuous one, research was directed towards a method which would not use a catalyst, although there are some processes producing soap directly instead of fatty acids, which employ chemicals. In most processes, water only is used for hydrolysis and no filtering of the sweet water is required. The high concentration of the sweet water represents a considerable saving in the steam consumption of the evaporators.

The disadvantages of the continuous processes are that they hardly pay for small installations, and that working under high temperatures and pressures increases the risk of blow-outs and accidents. High pressure boilers, and oil or other special heating equipment are also required. If soaps are to be produced, the fatty acids obtained by most of the continuous methods require more equipment for carrying out neutralization. It is therefore understandable that the small-scale soap boiler cannot be bothered with the multiplicity of fairly complicated machinery as compared with the very simple equipment used in ordinary soap boiling or in the Twitchell process.

Continuous Spraying Processes

Continuous spraying processes are employed mainly where soap and not fatty acid, is desired, in addition to glycerine. The common feature is a spraying chamber. In the Lorenz process the fats are thoroughly emulsified with the theoretical proportion of caustic soda or soda ash, and then sprayed into a vacuum reaction chamber through which superheated steam is passing at a temperature above the melting point of anhydrous soap-250-290° C. Immediate saponification occurs and the particles of soap fall downwards in the reaction chamber, while the more volatile glycerine is carried off with the steam. This process

is well suited for the manufacture of powdered soap. A similar process was patented by Refining, Inc.

Use of Solid Soda

In Kokatnur's process, the oil or fat is dissolved in kerosene and saponified with anhydrous powdered soda ash. As saponification proceeds, the practically anhydrous glycerine is distilled off. The residual soap gel is washed to remove kerosene and glycerine. This method is apparently still in the experimental stage.

Use of Water Only

This method probably represents the most important group of continuous fat-splitting processes which have been worked out on a large scale with satisfactory results. No chemicals are added to the charge. It is advisable to de-aerate both the oil and water before mixing, as any oxygen present may darken the fatty acids at the high temperatures used. The products are fatty acids which can be used for soap manufacture, and glycerine water of 30-35 per cent concentration.

In the Procter & Gamble method, superheated steam is injected into the fat and condenses at the working pressure of about 600 pounds per square inch. Some of the condensate dissolves in the fat, while an excess remains free. No heat exchanger for the fat is required.

This operation can be performed in a separate high-pressure vessel, but is preferably carried out in the lower part of the hydrolyzing chamber itself. The hot oil-water mixture is then introduced into the bottom of the vertical reaction chamber, where it meets a stream of water in countercurrent, which has been preheated to

1944

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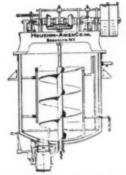


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about 360° F. under a pressure sufficient to prevent its volatilization. The water percolates downward through the fat-water solution, thereby washing out any glycerine liberated by the fat splitting. The sweet water is withdrawn from the bottom of the chamber, while the fatty acids ascend to the top, from where they are withdrawn continually. The reaction chamber may be up to 50 feet high. Glycerine yields up to 98-99.5 per cent can be obtained. The time of contact between oil and water is about 30 minutes.

The process operated by the Colgate - Palmolive - Peet Company is similar but differs in respect to the working pressures. These may be 200-250 pounds per square inch in excess of the pressure of saturated steam at the temperature employed. Fat splitting takes place in 2 stages. Two separate vessels may be used, or the first stage may take place in the lower part of a single column in which temperature and pressure conditions can be regulated independently from the second stage in the top of the column.

HER

In the Eisenlohr process, the oil and water are in uniflow rather than in counterflow. The oil and water are emulsified before entering the preheater, and are then passed into the horizontal reaction chamber, of which there may be one or two, which consists of a narrow bore pipe and an outer tube. High-pressure steam or Dowtherm is circulated in the annular space. Pressures inside the reaction tube are from 2500 to 3500 pounds per square inch. The mixture of water, glycerine and fatty acids is released into a flash chamber in which a substantial part of the water evaporates, while the rest collects in the bottom of the chamber. The mixture is then passed through a cooler into settlers, where the sweet water of about 35 per cent concentration separates from the fatty acids. The sweet water is subsequently concentrated in a vacuum evaporator by the steam from the flash chamber, resulting in great economy of

In the similar Hoffman process, the products of the reaction are also released into a flash chamber, but instead of entering settling tanks, they are separated by fractional condensation. This process seems likely to give glycerine high in fatty-acid impurities.

Post War Picture

It seems probable that new applications for both glycerine and fatty acids will be found as a result of war developments and continued research, for example, sebacic acid is used for making nylon, and undecylenic acid for insecticides. Plastics and plasticizers will also be big outlets. The manufacture of synthetic rubber, which uses large quantities of soap, will continue. M. I. Schwetzer. Chem. Age 50, 601-6 (1944).

Softening Point of Fats

A simple, reproducible method for determining the melting point or softening point of fats is as follows:

Put 0.5 ml. of mercury in a small thin-walled test tube and cool in ice and water. Above the mercury introduce 1 ml. of melted fat. Leave the tube in ice water a half hour, then preferably in a refrigerator overnight. Immerse the tubes in a beaker of water at about 20° C. for 30 minutes, in which a thermometer is suspended so that its bulb is level with the fat column. Raise the bath temperature about 0.5° C. per minute, stirring the water vigorously by means of an air current. Within a degree or two of the softening point, the fat begins to clear. The temperature is recorded when a ball bearing on the fat layer has fallen half way through the fat column. At this temperature the fat will not be quite clear. The temperature range from the beginning to the end of the passage of the ball bearing through the fat layer is less than 1° C. Independently made duplicate tests by different workers should not vary by more than ± 0.2° C. C. R. Barnicoat. Analyst 69, 176-7 (1944).

Scouring Fleece Wool

In scouring fleece wool in a 4-bowl system, where soap and alkali are added to the first three bowls and the last bowl is used for rinsing, by adding sodium metaphosphate to the water, the soap and alkali can be omitted from the No. 3 bowl. The detergent carried over into this bowl, since it is not

precipitated by hard water, continues its action in bowl No. 3. Dilution of the soap and alkali in this bowl also starts the rinsing process. Enough metaphosphate is added to bowl No. 3 before and during the run to keep the water soft. Nothing is added to bowl No. 4. This process produces a wool having a better color, odor and feel than the usual stock. H. Seymour. Chem. Age 48, 151-3 (1944).

Analysis of TSPP

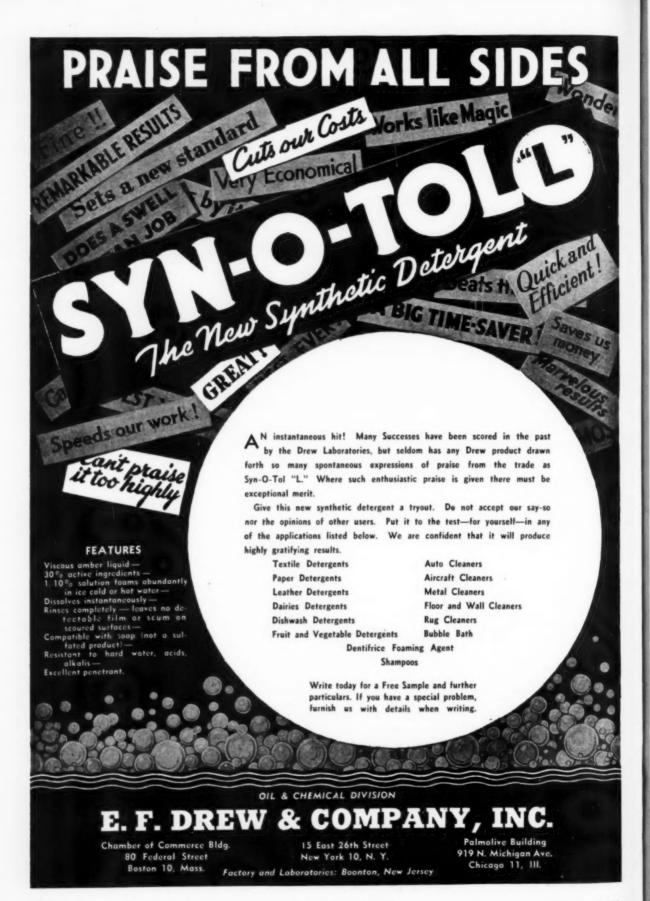
A volumetric method of analysis is given for Na-P-O: in commercial anhydrous tetrasodium pyrophosphate using a modification of the Britske and Dragunov titration method. In the absence of other polyphosphates, a degree of precision is obtained satisfactory for the type of product supplied by the manufacturers. The time required for the analysis is much less than for methods relying on precipitation with subsequent gravimetric treatment. The results of cooperative work are given. W. H. Koch. Oil & Soap 21, 175-6 (1944).

Rancidification Number

The Greenbank and Holm method of evaluating deterioration of fat by means of peroxide value is modified. The "rancidification number" is defined as the number of days necessary for 50 c.c. of fat in an Erlenmeyer flask at 50° C. and in the absence of light to develop a peroxide value of 3. The rancidification no. of lard decreases faster at high temperatures; it is independent of the freshness of the raw material and the pressure and temperature of rendering. L. Lauridsen. Kem. Maanedsblad 23, 117-28; through Chem. Abs.

Soap Substitute

Tergin consists for the most part of pectin and cellulose. It is of a hydrophilic and colloidal nature, and has a high capillary activity. Like soap, it penetrates into fibers and skin pores, emulsifies impurities and fat, and removes them adsorptively. It is a good soap-stretching agent and an effective soap substitute. G. A. Bosurgi. Riv. ital. essenze, profumi, piante offic. 24, 167-9; through Chem. Abs.



Salt Water Soap

D ESIDES containing as much mois-D ture as possible, a soap to be used in sea water must contain protective agents which help to get the soap into solution. While soap and certain synthetic detergents work well in sea water, unfortunately many synthetics are not suitable because they are made from strategic material, because they are available only in limited quantities and are high in cost, because the bar does not have the right physical properties, or because many do not meet the performance tests. As a consequence, when practically all suitable synthetics are taken for salt-water soap, production is still far beneath the needs of the Armed Services. It is imperative therefore that soaps without synthetics be produced that will perform satisfactorily in sea water.

A study has been made of other soap builders or adjuncts which might produce a soap that functions in sea water at a concentration sufficiently low to be usable both from a cost and performance angle.

The concentration of detergent in washing tests using standard soiled wool fabrics in artificial sea water, was varied until a solution was obtained which would remove all of the visible black from the fabric. The lowest concentration which would accomplish this was considered the optimum for that detergent. Coconut-oil salt-water soap (PS611) required 7 per cent of dry solids or over 15 per cent on the 55 per cent moisture basis. The addition of alkaline builders reduces the necessary concentration. Mixtures of 50 parts of soap with 50 parts of trisodium phosphate, metasilicate, N silicate, or soda ash required about 6 per cent, while a 50-50 mixture of soap and tetrasodium pyrophosphate required only 4.75 per cent.

For use in salt water, sodium resinate alone aids soap very little, but in combination with alkalies it is very effective. For instance, it requires only 3 per cent of a mixture of 50 per cent of tallow soap, 25 per cent of resinate, and 25 per cent of pyrophosphate to

meet the above test. The soap containing synthetic detergent as specified in 51D7 requires between 2.0 and 2.5 per cent to do the same thing. By using a slightly higher concentration, we have succeeded in getting as good detergent action in sea water without the use of synthetics.

The optimum composition was arrived at by varying first the amount of sodium resinate added to a fixed amount of tallow soap and pyrophosphate, and second by varying the amount of pyrophosphate added under similar conditions. The most effective composition was 2 parts of tallow soap to 1 part of resinate and 1 part of alkali salts. Of the alkaline salts it was found that 50-60 per cent could be metasilicate, N silicate or trisodium phosphate, with the balance tetrasodium pyrophosphate. When straight 25 per cent pyroposphate was used in the mixture, the solution gave a pH of 9.5. If the pH is raised to 11.0, better results are obtained. In order to change the pH of the tallow-soap-resinate-pyrophosphate mixture, the soap can be finished at a slightly higher alkalinity. B. S. Van Zile and J. N Borglin. Oil & Soap 21, 164-6 (1944).

Sulfate-soap Studies

Studies of the dependence of the sudsing power of sulfate soap on its concentration (0-7 per cent) showed that the foam height first increased steeply, showed a maximum at about 1 per cent concentration, increased again at about 2 per cent, and remained constant after 6 per cent. The foam stability-height after 20 minutes: height after 30 secondsshowed a maximum at about 2 per cent, and after a slight minimum, does not change after a concentration of 4 per cent. While the specific curve is normal, the viscosity curve shows a minimum at 2 per cent. Corresponding measurements on sulfate liquors of 0-25°Be. showed a maximum for the foam stability at approximately 8°Be., followed by a slight minimum. The curve for the pH of the solution is

similar, whereas the curves for viscosity, surface tension and adsorption show no irregularities. A number of experiments on the decomposition of lather by changes of temperature, an electric field, and by various additions of chemicals are described, as well as an apparatus for observing the decomposition of foam. N. V. Elkonin. Bumazhnaya Prom. 19, No. 2, 21-6.

Measurement of Lather

Two methods are described for measuring the stability of lather from solutions of soaps and detergents. One is called the "liquid drainage" method, the other a modified "foam time" method. The two methods gave qualitatively equivalent results. Rates of drainage of liquid from soap and detergent lathers were not proportional to the volumes of liquid in the lather.

The stabilities of foams from 0.1 per cent solutions of soaps of most of the natural fats and oils tested were much greater than those of foams from single soaps that were sufficiently soluble to form solutions of this concentration. The foam time of a mixture of equal volumes of two 0.1 per cent solutions was not equal to the average of the foam times of the separate solutions.

A number of electrolytes including sulfate, chloride, carbonate and phosphates—organic liquids, pectic materials and vegetable gums greatly increased the foam stability.

Data on 0.03 per cent sodium tallow and palm oil soap solutions indicated a maximum foam time at a pH of about 10.6. Increasing the concentrations of 10 soaps from 0.05 to 0.1 per cent more than doubled the foam time. R. C. Merrill, Jr., and F. T. Moffett. Oil & Soap 21, 170-5 (1944).

Washing Small Rugs

Heavily soiled small rugs should first be washed in cold water using cold-water soap. As many rugs are made of old cloth and as most colors run, each rug after washing should be rolled separately before putting in the extractor.

In the drying of round rugs when these have been taken out of the extractor they should be laid flat on a level surface, pressed out from the center until there is no bulging and left there until dry.

Goat's hair rugs should be laid on a flat surface and brushed with a good soap such as is used for woollens. Woollen bath room rugs should be washed by themselves—not with rag rugs—as they shrink very readily and should be treated as woollen goods. Chenille bathroom sets should be dried in dry tumblers.

If some small rugs seem too soft to lie properly on the floor, cold boiled starch may be spread on the backs of the rugs and if necessary they may be tacked to a flat surface. J. A. Wright. Bull. National Research Laboratories, Canada, No. 13, June, 1944.

Antioxidants

The most effective single compound as an antioxidant in vegetable fats and oils was found to be gallic acid, although NDGA (nordihydroguaiaretic acid), ascorbic acid, and ascorbyl palmitate each about doubled the keeping time of any given vegetable fat or oil. Amino acids were negative with the exception of methionine. NDGA in combination with either citric acid or phosphoric acid showed marked synergism; these combinations were very effective antioxidants. K. F. Mattil, L. J. Filer Jr., and H. E. Longenecker. Oil & Soap 21, 160-1 (1944).

Hydrolyzing Fats

Preheated water and a preheated solution of water in fat are passed in countercurrent flow in intimate contact with each other at 365-600°F, and a pressure of 150-160 pounds per square inch. The preheated solution of water in fat is prepared by introducing steam into fat while maintaining sufficient pressure to cause the steam to condense. N. G. Robisch, to The Procter & Gamble Co. British Patent No. 551,710.

Glycerine Residues

Glycerine - distillation residues are heated with steam and a strong electrolyte at a temperature above 200°C., under pressure. After heating, the insoluble fraction and the water are separated. R. Endres, to Deutsche Hydrierwerke A.-G. German Patent No. 736,885.

FAT and OIL OUTLOOK

(Continued from Page 35)

stock herds of Europe back to normal, we shall probably face the hazard of insufficient world fat supplies in the spots where they are most needed for at least another 18 months and possibly longer. The dates of the European armistice and the final conquest of Japan will largely determine the extent and duration of the present maldistribution.

It is doubtful that any one outside of Japan knows how much fat Japan has produced and stored during her period of domination, but if she has as much trouble in storing a one billion pound fat surplus as we have in storing a similar quantity of edible fats, it is a fair assumption that she will not have a large surplus at the end of the Pacific War.

Total Fat Supplies of U. S.

The United States in the years immediately preceding the present war, was not a vital factor in the world movement of fats. We imported sufficient foreign oils to meet requirements for specific domestic uses and tried to export enough domestically produced fat to maintain a reasonable balance between domestic production and consumption. Our present ample supplies were purposely accumulated by gov-ernment for the dual purpose of com-pensating for failure of imports and to assist in war and postwar feeding of Allied and liberated areas. When and to what extent the United States will have an export movement of sufficient volume to deplete our present surplus will depend largely on the progress of the invasion, as reflected in the food requirements of liberated areas.

The results of government stimulation of increased domestic fat production during 1941-2-3 are reaching their peak during the present crop year. When it is estimated that our total domestic fat production will be seven hundred fifty million pounds more than in the last crop year. It is reported that in the first five months of 1944, the hog slaughter was 46 per cent greater and the cattle slaughter 21 per cent in excess of the corresponding months in 1943. However, present government policies, combined with feed shortages, are curtailing production of livestock and contributing to the slaughter of lighter weight animals and the effects of these policies may become apparent early in 1945.

Postwar Fat Exports from the U. S.

Widely varying "guesstimates" have been made as to the immediate postwar fat deficiencies of Europe and the U.S.S.R. Russia has a very low per capita fat consumption and restoration of agriculture in the Ukraine will go a long way toward feeding the Russian population. In Continental Europe, which normally takes three-fourths of all the world fat exports, the fat consumption of most countries has been very drastically reduced during the war years. Their immediate problem is to build up their livestock supplies and to restore their oil crushing capacity which has no doubt been badly damaged.

Europe's immediate postwar requirements will consist primarily of finished fats and secondarily of high fut yielding seeds, such as copra, palm. kernels, and peanuts. As their livestock supplies increase and crushing capacity becomes available, the crushing industry can gradually return to normal crushing operations which, from lower oil content seeds, yield less fat and more oil cake.

While the timing of the European armistice is a strongly governing factor in the situation, it seems probable that present world supplies, plus this year's world crops, will be ample for the needs of Europe and the U.S.S.R. through the balance of 1944 and the first quarter of 1945. The present available world fat surpluses in Africa, South America and the United States can be moved out rapidly when needed and as ships are available.

A recent private statistical report from England ignores the United States lard surplus as a source of European supplies on the theory that if the lard were exported, the United States would have to replace it with imports which could go more advantageously to Europe. However, the European housewife likes lard and our surplus, while heavy by domestic consuming standards, can supply only a minor portion of Europe's postwar fat requirements. The United States government will undoubtedly make every effort to promptly export the surplus which it has accumulated for this specific purpose.

Fats for U. S. Soapmaking

On account of government controls to conserve fats for edible use, our domestic soapmaking fats, although basically dependent on overall world stocks, must be viewed from a much narrower perspective than that of either total world or total United States supplies.

On December 7, 1941 it became obvious that the interruption of oil and copra imports from the Pacific areas, required a change of ideas as to what constituted adequate domestic stocks of tallow and grease which are inherently difficult to store for long periods. Current supplies are therefore largely dependent on the ratio of consumption to production plus a small import tonnage.

Before Pearl Harbor, and After

Prior to Pearl Harbor, the fat constituents of domestic soaps approximated 60 per cent tallow and grease and 25 per cent lauric oils, the balance consisting of palm, fish, and miscellaneous oils. After Pearl Harbor, the failure of lauric and palm oil imports and the severe restrictions on the use of many fats normally used in soap, forced the soap industry to depend on tallow and grease for 80 per cent to 85 per cent of its total fat ingredients. Thus instead of the 714 million pounds of lauric, palm, and fish oils used in soap during 1941, the availability of these oils for soapmaking shrank to 267 million pounds in 1942 and to 240 million pounds in 1943, thereby creating an apparent yearly deficit of about 450 million pounds of customary soap fats. Bureau of Census figures show that notwithstanding increased soap de-

(Turn to Page 135)

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U.S.I. CHEMICAL N

New Modified Alkyd Offered by U.S.I. for **Specification Paints**

S&W Aroplaz 1375 Meets W.P.B. Phthalic Anhydride Restrictions

Announcement of a new ester gum-modified alkyd resin, for use in the specifications re-cently issued to meet current W.P.B. restrictions on phthalic anhydride, has been warmly received by formulators of protective coatings.

The new War Production Board directive, Order M-139, Direction No. 2, by further limiting the percentage of phthalic anhydride in the vehicle solids components of various specification coatings, has, in effect, made obsolete many government agency specifications. However, alternate specifications re-quiring resins of lower phthalic content have been issued; many of these, like those shown below, call for semi-alkyd resins, or alkyd resin-ester gum varnish blends.

U. S. I.'s new resin. S & W Aroplaz 1375, is a composite ester gum-modified alkyd speis a composite ester gum-modified alkyd spe-cifically developed to meet these new speci-fications; it is now being used effectively as the total vehicle solid component in such specifications as these:

ARMY SPECIFICATIONS

- 3-171 Grade II, Primer, Synthetic, for Ferrous Metals
- 3-172A Grade II, Primer, Synthetic, Refinishing
- 3-173 Grade II, Enamel, Synthetic, Lustreless
- 3-174 Grade II, Enamel, Synthetic, Semi-
- 3-175A Grade II. Enamel, Synthetic, Glos

NAVY SPECIFICATION

52-P-26 (Amend, of 6/1/44) Primer, Metal (Brown)

Polymerized to a high viscosity, S&W Aroplaz 1375, permits formulation of acceptable products containing maximum volatile content. This permits coating manufacturers to produce specification finishes at minimum raw material cost, with no sacrifice in quality.

Samples of the new resin and additional information on formulation can be obtained by writing to U. S. I.

Startling New Uses Loom for Today's "Miracle" Drugs

Broad Potentialities Seen in Recently Reported Cures with Penicillin, Atebrin, Sulfadiazine and Other Chemicals

With the discovery, in 1935, of the remarkable medicinal properties of the sulfonamides, chemotherapy came back into the limelight, renewing a march which has since turned into a veritable parade of new life-saving pharmaceuticals.

> lar press, penicillin, atebrin, sulfadiazine, the vitamins, and other chemical compounds have won quick fame because an energetic chemical industry was able to push them into large-scale production almost overnight. In less than a decade, production of sulfa

> drugs has leapt past the 10,000.000-pound mark. Atebrin, war-essential substitute for quinine, is now being produced at a rate which dwarfs previous world production of quinine. Vitamin production has skyrocketed into astronomical figures. And – when the full story can be told—the volume production of penicillin from a lowly mold will go down as one of the industry's big achievements.



While volumes have been written about the capabilities of these new pharmaceuticals, one need only watch the current news to gain an idea of the unlimited horizons ahead. Penicillin, for example, finds a new use in the treatment of psittacosis, the deadly "par-rot fever". Sulfadiazine is used to fight meningitis. Arthritis, widespread and stubbornly resistant to treatment, is now being successfully treated with penicillin.

In the field of food allergies, vitamin C is uggested as a cure. Pneumonia and empyema afford two further examples; formerly unaffected by penicillin, these diseases now yield to intrapleural injections. Even the irksome mosquito seems to be losing ground, large doses of vitamin B₁ being reported to immu-nize people against its bite.

U. S. I. Chemicals at Work

In the field of drug synthesis, U. S. I.'s ethyl acetoacetate is widely used in the prep-aration of such products as atebrin, vitamin B₁, sulfamerizine, antipyrine and amido-pyrine. Diethyl oxalate is used in the manu-facture of gamma-pyrones; ethyl sodium

(Continued on next page)



From hospitals at home to front-line first-aid U. S. I. Pure Alcohol stands guard against infection. Perhaps the oldest medical chemical, alcohol is still the most widely used.





Official Photo U. S. Army Signal Corps

Military paints ranging all the way from stencil paints to the olive drab which marks the jeep the world over are being formulated with S&W resins. Of particular interest now is U. S. 1.'s nt of the new resin, Aroplaz 1375.

Penicillin Inactivator Facilitates Culture Study

Cultures taken from patients who have been receiving penicillin treatment can be mate rially improved by a new penicillin inactivator. The inactivator completely destroys the penicillin in the culture, thus permitting the culture to develop naturally.

Extracted from strains of Staphyloccus-aureus, the inactivator is obtained by pre-cipitating 24-hour saline cultures with acc-tone. After one change of acetone and two of ether, the precipitate is dried, powdered. and stored at room temperature,

Ether-Air Mixture Proves Best for Cold-Weather Diesel Starting

Recent research has shed new light on the question of whether high cetane fuel blends give better cold-weather starting than "boost-ers" introduced into the diesel engine's air stream. The findings, reported in the S.A.E. Journal, are overwhelmingly in favor of the latter method.

The most effective fuel blend tested was obtained by adding 25 per cent ethyl ether to the diesel fuel; this gave far better results than did blends using butyl or hexyl ethers.

But even ethyl ether only brought the starting temperature down to -5 deg. F.

When ethyl ether was directly introduced into the air stream of diesels, however, they started at temperatures down to -40 deg. F. In addition, partial combustion occurred im-mediately, relieving the battery of the major part of the starting load. The research further indicates that fear of fire from this method, expressed by manufacturers of crankcase scavenging diesels, has little basis in fact.

Alkyd Resins Employee' in New Calking Compound

A permanently plastic, nonshrink :g, nonhygroscopic calking material suitable or sealing joints on aircraft, fuel tanks, etc., is described in a recent patent. An unmodified sebacic acid alkyd resin is the base in which an inert filler, formed mainly from asbestos filler and ground mica, along with a small percentage of zinc chromate, are mixed.

Zein Acetate Produces Strong, Flexible Films

Protective coating films of zein acetate are claimed to be stronger, more flexible, and more water-resistant than films of zein itself or plasticized zein, according to a British patent on a process for making the acetate.

The acetate differs from zein in that it is insoluble in ethyl alcohol. But it is soluble in mixtures of 95% ethanol with butyl lactate or ethylene glycol monoethyl ether. The mixture should contain 50 to 80% ethanol.

In the description of the process, acetic anhydride, acetic acid, acetyl chloride, and ketene are mentioned as suitable acetylating agents. Sulphuric acid or anhydrous sodium acetate are employed as catalysts.

New High-Antiknock Fuel

A recently granted patent describes a highantiknock motor fuel consisting essentially of isoparaffinic motor fuel hydrocarbons, such as those produced by the alkylation of isoparaffins. The hydrocarbons are of the type that may be produced by alkylating isoparaffins with normally gaseous olefins and an aliphathic ester of formic or acetic acid, such as butyl acetate.

New Alternate for Shellac in Rubber Preservatives

A new compound, designed to take the place of shellac in rubber preservation lacquers is claimed by a German article to be both non-cracking and non-scaling. Vinnapas, a polyvinyl compound, is dissolved in either alcohol, hexane, acetone, ethyl acetate or butyl acetate. Pigment and resin are then added to produce a high-gloss, strongly adhesive black paste.

New "Miracle" Drugs

(Continued from preceding page)

acetone oxalate in making acetopyruvic acid; acetone as a source of chloroform.

Ethyl acetate and ethyl formate are among the starting materials in the manufacture of sulfadiazine. Indalone, U. S. I.'s powerful new insectifuge, serves as a vital ingredient in the government's new insect repellent.

Alcohol, ether, acctone and other solvents are used on a large scale in all types of extractions. Particularly important is the use of amyl acetate in the extraction of penicillin. Vitamins, hormones, alkaloids, glucosides and other drugs are still extracted in large amounts from natural animal and vegetable sources; here U. S. I. solvents are vital tools in extraction and purification. In analytical work, indispersable to control of both production and administration of pharmaceuticals, the same solvents are constantly used.

End-Product Uses

U. S. I. products are found not only in intermediate stages of pharmaceutical manufacture, but also in end products. Ether and ethylene are used in anesthesia, Ethyl formate is used internally as a remedy for diarrhea, as an inhalant for respiratory affections, and externally as a rubefacient. Urethan is used as an anti-spasmotic for convulsions, restlessness, etc., and as an antidote for strychnine, resorcinol and picrotoxin poisoning. It is also used as a co-solvent to increase the solubility of quinine hydrochloride in water. Alcohol, ether, and acetone are used in the manufacture of pill coatings. Sulfonamide films useful for treating burns and surface wounds have been prepared by spraying 50% acetone or alcohol emulsions of the sulfa drug with methylcellulose, triethanolamine and sorbitol on a glass surface and allowing to dry.

on a glass surface and allowing to dry.

Alcohol is perhaps the most widely used solvent in the medical profession. Its germicidal properties make it invaluable in sterilization. It is also widely used as a vehicle for medicines and as an ingredient in ointments, lotions, antiseptics, etc.

Nerve Block

Alcohol, too is finding increasing use as a pharmaccutical end-product in therapeutic nerve block. A recent application of this technique is in the treatment of blood vessel spasm, a disease of old-age, which is both painful and dangerous. Where the age of the patient makes surgery hazardous, 95% alcohol is injected around the sympathetic nerve, bringing immediate relief.

TECHNICAL DEVELOPMENTS

Further information on these items may be obtained by writing to U.S.I.

A new resin adhesive designed to bond copper or copper alloys together is announced. According to the maker, it also bonds copper to other metals or non-metallic structural materials when co-bonding agents are employed. (No. 837) U.S.I.

Continuous plastic sheeting, up to 54 inches in width, is now produced in thicknesses from .030 to .25 inches. The surface is described as workable and unaffected by contact with gasoline, oils, acids, most alkalis, alcohol. Suggested postwar uses include lugagae, wall paneling, flooring, table tops, house furnishings. (No. 838) U S I

A new artificial leather, reported to exceed natural leather in strength and weather resistance and to be mildewproof, is announced. (No. 33)

Availability of a humestant for civilian use is announced. Valuable for stabilizing the moisture content of foods, cosmetics, adhesives and a wide range of other materials, the product is a hexahydric alcohol said to possess extremely low volatility, neutral reaction, bland taste, and other desirable properties. (No. 840)

Permanent sealing of riveted fuselages, fuel tanks, gun turrets and acrylic structures against leakage caused by severe vibration is the war purpose of a new sealing tape. Tape is insoluble in common solvents, such as aromatic aviation fuel, ethyl and butyl acetate, and resists hardening from prolonged exposure to air. (No. 841)

A new cleaning compound, which comes as a self-emulsifying, non-phenolic liquid, is said to remove grease, oil, smut, and drawing and buffing compounds from metals and painted surfaces. Used as supplied for dipping, spraying, or brushing, or as a water emulsion in washing machines.

USI (No. 842)

Losening rust-frozen parts is said to be facilitated by a quick-acting new penetrant oil. The product is also said to dissolve gum, dried grease and oil, and to remove rust and carbon deposits.

USI (No. 843)

To aid carton re-use, a new "carton colored", opaque ink is offered to obliterate old stencils. It is claimed that the new ink completely covers the old markings and dries almost instantly after application by brush.

New rust preventive cils are offered in 14 grades. According to the manufacturer, the cils form protective coatings ranging from thin, transparent films to heavy, abrasion-resistant coatings of the water-proof variety.

USI

(No. 845)

To scent floor waxes, furniture oils, window cleaning fluids, insecticides and kindred products, a new, low-cost odorant is offered, with what is described as a powerful, clean, lemonpine odor.

USI

NDUSTRIAL CHEMICALS, 1151 BRANCHES IN ALL PRINCIPAL CITIES 60 EAST 42ND ST., NEW YORK 17, N. Y. INTERMEDIATES ACETONE ALCOHOLS RESINS OXALIC ESTERS Ethanol (Ethyl Alcohol) PHTHALIC ESTERS ETHERS OTHER ESTERS OTHER PRODUCTS FEED CONCENTRATES *Curbay Special Liquid *Vacatone 40

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PRODUCTS AND PROCESSES

Composition of Sulfate Soap

A sulfate soap, a by-product of sulfate pulp manufacture, contained 47 per cent of fatty acids and resin acids, 8 per cent of neutral products, 1 of phenols, 2 of "incrustants" insoluble in water and ether, 35 per cent of moisture, 0.25 of soda ash, 5 of total alkali calculated as Na20, and 0.3 per cent of sulfur. Two commercial methods for the manufacture of phytosterol and for the purification of tall oil are described. F. T. Solodkii. Bumasznaya Prom. 19, No. 2, 18-21; through Chem. Abs.

Hard Water Detergent

An aqueous solution of an alkali metal sulfite is allowed to react at 65-130 °C. with the nitrosyl chloride addition product of butyl oleate. The water-soluble portion of the reaction product is separated from the water-insoluble material and dried. L. J. Beckham, to The Solvay Process Co. U. S. Patent No. 2,336,387.

Hard Water Detergent

A composition which does not produce deposits and turbidity in hard waters is prepared from a potassium soap in which is incorporated the reaction products of phosphoric acids containing less water in the molecule than orthophosphoric acid, and simple aliphatic amines such as monoethanolamine or various aliphatic amines substituted with hydroxyl, aryl, aralkyl or cycloalkyl groups. A. Volz and R. Watzel. U. S. Patent No. 2,335,466.

Naphthenic-acid Soaps

Naphthenic acids produced in the refining of Russian and Rumanian petroleum are finding increased importance in the production of soaps and other derivatives for the textile industry and for other uses. In the impure state, naphthenic acids form an almost black, viscous liquid with a pungent odor. Naphthenic acids with an acid number of 200-275, boiling point of 240-300° C., iodine number of 0-12, and an unsaponifiable content of about

10 per cent are most appropriate for soap production. The lower the iodine number, the better are the acids. One means of obtaining naphthenic acids is by extraction with 5 per cent caustic soda of the tar acids resulting from the sulfuric-acid refining of petroleum. The unpleasant odor should be easily masked with lavender and similar materials. Formulas for several soaps are given. Widaly. Seifensieder-Ztg. 69, 211-12; through Chem. Abs.

Bleaching Wool

For bleaching wool, aqueous solutions of chlorine, hypochlorous acid or their salts are used with an addition of high-molecular protein degradation products. Chem. Fabrik Grunau A.-G. German Patent No. 735,587.

Continuous Soap Making

A saponifying agent such as lye is mixed with fat and the mixture passed continuously to a centrifugal zone at a temperature to promote saponification. A further quantity of a more reactive fat than that remaining in the mixture is added while the mixture still contains unreacted saponifying agent, after saponification of at least a part of the initial fat charge. Leopold Sender, to The Sharples Corp. U. S. Patent No. 2,335,457.

Cleaning Agent

As cleaning agent an emulsion of alkaline alkali salts and unsaponifiable components obtained as by-products of paraffin oxidation, is used. L. Mannes and W. Seiffert, to Henkel & Cie. G.m.b.H. German Patent No. 735,569.

Washing Agents

Water-soluble nonsoapy washing agents particularly adapted for the washing of cotton goods, are prepared from nonsoapy detergents of the class consisting of a sodium salt of a sulfonated or sulfated fatty alcohol or of an isethionic acid, taurine, sarcosine or metaniline condensation compound

with a primary or secondary alkyl or allyl radical or a fatty acid acyl radical. The sodium chloride and sodium sulfate, which have a detrimental effect on the washing of cotton goods, are removed from the detergent. There is mixed with the de-salted detergent 0.25-4 parts by weight of an alkali metal carbonate, silicate or orthophosphate. Lever Brothers & Unilever Ltd., R. Thomas and C. B. Brown. British Patent No. 551,616.

Cation-active Compounds

The production is described of such quaternary ammonium compounds as (N-benzyl-N-methyl carbamyl methyl) hexadecyl dimethyl ammonium chloride, which have dispersing, bactericidal and fungicidal properties. F. Leuchs, to Winthrop Chemical Co. U. S. Patent No. 2,336,-179.

Detergent Compound

Water - soluble surface - active amines of high molecular weight are formed by the reaction of tetradecyl glycidyl ether with diethanolamine, or that of lauryl glycidyl ether with monoethanolamine, or other similar reaction. N. B. Tucker, to The Procter and Gamble Co. U. S. Patent No. 2,334,517.

Degreasing Method

Trichloroethylene alone or mixed with benzine (1:1) is a suitable degreasing agent for linotype matrixes. The apparatus used has sieve-like baskets. The matrixes are first immersed in a soap solution, then repeatedly in trichloroethylene. For drying the matrixes the temperature is often increased to 80-90° C. The trichloroethylene can be recovered. P. Gavrilov and A. Egorov. Poligraf. Proizvodstvo 1940, 27-8; through Chem. Abs.

Sweating of Soaps

Experiment showed that under test conditions soap absorbed moisture at 79 per cent humidity, and sweating appeared at 80 per cent humidity. A number of agents tested failed to prevent sweating. M. N. Goswami, B. K. Ganguly, N. Mukherjie, and P. K. Choudhury. *Indian Soap J.* 9, 44-53 (1943).



Hundreds of thousands of yards of surgical adhesive tape are being used by our armed forces to top dress a hundred and one minor and major wounds, cuts, scratches.

Into the manufacture of this vast yardade of adhesive tape go great quantities of Lanolin USP. That's why Lanolin USP and other grades of Lanolin, Degras and Wool Grease have been placed on allocation . . . to make sure war needs are met first.

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No. 2,350,521, Free - Flowing Powdered Soap Mixture and Its Method of Preparation, patented June 6, 1944 by Grady M. O'Neal, Chicago, assignor to Sherwin-Williams Co., Cleveland. A dry, free-flowing powdery soap mass consisting of waterinsoluble metallic soap of "rosinic acid" and water - insoluble metallic soap of "fatty type acid," the amount of "rosinic acid" being at least one part by weight to four parts by weight of "fatty type acid," said soaps being in intimate association as a result of one having been formed in the presence of the other.

No. 2,350,592, Alkaline Cleaning Composition, patented June 6, 1944 by Louis J. Comaschi, Kansas City, assignor to Campbell-Taggart Research Corp., Kansas City. A metal oxide corrosion inhibiting composition for forming cleaning baths for metal ware with tin surfaces having tin oxide coatings and with aluminum surfaces having aluminum oxide coatings comprising, sodium metasilicate (Na20:3.22 SiO2) 20 to 30 parts, and 20 to 30 parts of material selected from the group consisting of sodium acid phosphate, sodium acid sulphate and sodium bicarbonate, all of said parts being by weight.

No. 2,350,814, Insecticide, patented June 6, 1944 by Hans von Philipp, Leipzig, Germany; vested in the Alien Property Custodian. The process of increasing the effectiveness of insecticides which consist essentially of hexachlorethane, which comprises activating the said insecticides by adding thereto a relatively small

percentage of a chlorinated aromatic compound of the group consisting of parachlorbrombenzene, chloronaphthalene and paradichlorbenzene.

No. 2,351,351, Apparatus for Dedusting Comminuted Soap, patented June 13, 1944 by Bernard L. Maxwell, Reading, and Charles T. Atwood, Belmont, Mass., assignors to Lever Brothers Co., Cambridge, Mass. Apparatus for dedusting soap comprising a chamber, means for introducing soap particles at the top of the chamber, a series of vertically spaced inclined ramps arranged in said chamber in position to support the particles in a continuous tortuous flow through the chamber and to form a series of curtains of falling particles between the successive ramps, an exhaust conduit connected to said chamber above the uppermost ramp, suction - producing means connected to the exhaust conduit for inducing a flow of winnowing air upward through said chamber and through said curtains of falling particles to produce a series of winnowing actions on the curtains of particles and for entraining the dust content of said particles and exhausting the dust-laden air from the chamber, means for admitting winnowing air to said chamber only at a point below the lowermost of said ramps, and means for simultaneously and accurately varying the velocity of flow of air through each of said curtains of falling particles including an adjustable damper movable to admit a controlled mount of supplemental air to said apparatus from the exterior thereof, said damper being located at a point between the uppermost ramp in said chamber and said suction-producing means whereby supplemental air admitted by the damper mingles with the dust-laden air passing to said suctionproducing means and operation of the damper serves to vary the action of said suction-producing means on the winnowing air passing through all of the curtains of falling particles and effects such variations simultaneously and accurately.

No. 2,351,359, Mothproofing, patented June 13, 1944 by Henry N. Mitchell, Sanford, Maine, assignor to M. H. Hoepli, New York. A mothproofing composition adapted to evaporate its water on a woolen and deposit substantially pure salicylic acid as the sole mothproofing agent and also deposit, a substantially imperceptible resin and plasticizer, said composition consisting of salicylic acid as a mothproofing agent, and also containing a normally water-insoluble resin, a less but effective quantity of

a plasticizer, an organic hydroxy material solvent holding the acid and resin and plasticizer in solution, and several times as much water as solvent holding acid and resin and plasticizer in emulsion.

No. 2,351,559, Process for the Preparation of Detergent Mixtures, patented June 13, 1944 by Andrew Treffler, Paterson, N. J. assignor to Solvay Sales Corp., New York. The process for the production of a detergent mixture which comprises incorporating with a mass of finely divided solid particles comprising sodium carbonate an amount of water sufficient only to form a moist, nonpasty mass with the water disseminated therein and thereafter mixing with said moist, non-pasty mass a finely divided anhydrous phosphate from the group consisting of tetra-sodium pyrophosphate and sodium tetra phosphate in an amount such that the phosphate and the moist mass form a detergent mixture which sets to a friable material which is readily broken up into fine particles that are free-flowing and readily soluble in

No. 2,351,583, Insecticidal Composition, patented June 20, 1944 by Clifford J. Boissonou, Concord, and Wallace J. Yates, Martinez, Calif., assignors to Shell Development Co., San Francisco. An insecticidal composition comprising an emulsifiable mineral oil insecticidal material and a minor portion of a saturated aliphatic ketone having from 7 to 12 carbon atoms, and ketone being free from polarizing groups in the alkyl chains thereof.

No. 2,352,021, Detergent Composition, patented June 20, 1944 by Ernst Schubert, Jonsdorf, near Zittau, and Heinz Pierer, Zittau, Germany; vested in the Alien Property Custodian. A washing agent and detergent capable of operating in hard water without forming insoluble lime soaps, comprising substantially equal parts by weight of water-soluble alkali lignin and soap.

No. 2,352,078, Insecticidal Composition, patented June 20, 1944 by Gerald H. Coleman and Clarence L. Moyle, Midland, Mich., assignors to Dow Chemical Co., Midland, Mich. hinsecticidal composition comprising as an active toxicant from 0.5 to 10 per cent by weight of a compound having the formula

R—S—(CnH2n—O)m—CnH2n—C1 wherein R represents a cyclic organic radical selected from the group consisting of aromatic, alicyclic, and heterocyclic radicals and in which any halogen substituents which may be present are attached directly to nuclear carbon atoms, n is an integer from 2 to 4, inclusive, and m is an integer not greater than 3.

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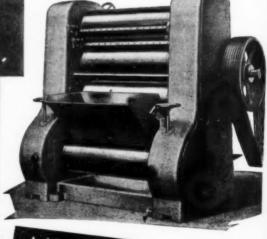
WILL post-war production be conducted on a higher plane of efficiency as a result of wartime experiences? We believe so. Also we believe that modern, proficient machines will be of greater importance than ever in the economic life of the nation.

Thus the high production, sturdiness, ease of operation and reliability of LEHMANN soap mills will take on new value, for they give that extra service which marks the difference between ordi-



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nary mills and those made according to LEHMANN engineering and manufacturing standards.



A LEHMANN SOAP MILL designed for post-war era of higher efficiency

THE LEHMANN Service Department always is available to recondition your LEHMANN machines to their highest productivity.

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EQUIPMENT AND BULLETINS

F YOU want additional information on any of the items described below or if you want any of the bulletins, catalogs, etc., write to the MacNair-Dorland Co., Inc., 254 West 31st St., New York 1, mentioning the number of the item.

128-Universal Filler Folder

Stokes & Smith Co., manufacturers of packing machines, Philadelphia, have just gotten out a four-page folder on their Universal Filler. This filling machine is designed to answer unusual package filling requirements in sizes from 1/4 ounce to five pounds. According to the folder the company's customers fill more than 150 different kinds of material on the Universal Filler-almost everything, in fact, excepting liquids and solids. Filling rates run from 15 to 30 packages per minute for average sized packages to 45 and even 50 packages per minute with one operator for filling very small

packages. The folder carries illustrations of various views of the filler along with construction and operating data. Copies free on request.

129-Jar Mills Circular

A four-page circular, Bulletin No. 255, Jar Mills, was issued early last month by U. S. Stoneware Co., Akron, O. Fully illustrated, complete with operating data and details are the "Roller Type" jar mills, standard jar mills, quadruple jar mills and mill jars. Copies are available on request.

130-New "Wedge-Slot" Screens

Hendrick Manufacturing Co., Carbondale, Pa., has just released an illustrated bulletin on its new "Wedge-Slot" screens. These screens are made in a number of different bar sizes, bar profiles and assemblies for both wet and dry screen operations to fit all types of equipment. Recommended for many

difficult screen operations in soap preparations, "Wedge-Slot" screens can be used for dewatering, jigging and washing, air-cleaning, drying, pulverizing, etc. Data sheets for "Wedge-Slot" screen assembly and installation are enclosed with the circulars.

131-Thanite-in Basic English

A booklet on the Hercules Powder Co., Wilmington, insecticide "Thanite," written in basic English, was released July 18. One indication of what may be expected in the postwar world, the booklet is said to be a forerunner of many more booklets in basic English on Hercules products. In the past the company's books have been written in normal English. In some cases it is said this has resulted in confusion on the part of readers lacking a full knowledge of the English language. On the other hand, translations in the many languages of the various countries where Hercules products are sold would be too costly, according to Dr. Theodore Switz, head of Hercules' overseas division. Basic English seemed to offer obvious advan-

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with unusually good emulsification and cleansing properties and good rinsability.

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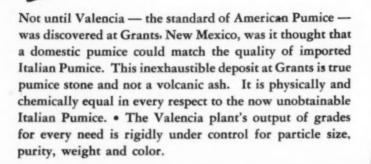


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Silica	American Pulverized Per Cent	Select Per Cent	
Alumina	72.90	73.24	
Alumina Iron Oxide	11.28	10.61	
Titanium Ovid	.86		
		1.57	
Nagnesium Oxide	.80	.10	
oda	.36	1.10	
otash	3.64	.40	
otash Uphuric Anhydride	4.38	3.03	
ss on ignition	.03	5.58	
- Janilon	5.20	.05	86
		4.04	

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tages for use in booklets for foreign distribution.

132-P & G Promotes Soap Economy

"Soap Saver Hints for Wartime" is the title of a four-page folder issued by the Procter & Gamble Co., Ivorydale, O., which outlines ways for avoiding waste of soap in kitchen, laundry and bath room. Brief descriptions of ten P. & G. soap products are provided, with suggestions for their effective use. In Chicago the folder is being distributed through the home service department of the local electrical utility company.

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133-Data on Petroleum Bases

A new series of eight Technical Data Files, prepared by Dr. Reich Meve, director of the Department of Industrial Research, L. Sonneborn Sons, Inc., New York, providing information on petroleum products used in the manufacture of household sprays, cattle sprays, corn earworm oils, protective hand creams, brushless shaving creams, etc., are now available. The



Two sons of Henry F. Herrmann, sales Two sons of Henry F. Herrmann, sales manager of the General Dyestuffs Corp. New York, now in widely separated parts of the globe. Right is Capt. Robert H. Herrmann, U. S. Army Ordnance Transportation, located at Baltimore, Md. and, left, Corp. William E. Herrmann of the A.A.C.S. in distant India. Both the Herrmann boys who have been in the Army for the hast two years are in the Army for the past two years are graduates of Cornell University.

files are standard filing cabinet size and may be used as folders for filing all data on the subject of the particular

file. Data on the front of the file covers properties, principles of formulation and commercial preparation of the product. The products for which data are supplied in these files include also household insecticides, automobile and furniture emulsion polishes, solvent cleaners for industrial floors, trucks and busses, etc. Copies are available free by writing.

134—Contract Termination Books

Suggestions to war contractors as to methods of and preparation for contract terminations applying to fixed-price supply contracts of the War Department are included in a booklet, "Contractors Guide," just issued by the War Department. A general distribution of these pamphlets is being made to all Government contractors for the purpose of making them familiar with the termination procedure in the event that changing events of war should, at some time, require termination of their contracts. Those desiring these pamphlets may receive them by writing the Army Service Forces, Quartermaster Depot, Jeffersonville, Ind.



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INDUSTRIAL USES OF SOAP

(From Page 28)

with the control of fruit drop, a source of considerable loss in the orchard. Soap is used as the emulsifying and stabilizing agent for the wax dispersions carrying the chemically active auxins which actually prevent the dropping. (83) New plant protectant sprays also use soap as an important ingredient. (84) Compositions for protectively treating fresh fruit by coating them with waxes similarly use soap as the emulsifier; one recent patent (85) describing methods whereby such emulsions could be made and used even with hard water. This is achieved by adding a sufficient quantity of sodium hexametaphosphate to prevent the precipitation of any insoluble soaps that may be formed.

Before concluding, it would be of interest to comment on the purely scientific use of soap films on wire contours for solving difficult mathematical problems of minimal surfaces. (86) Perhaps more practical is the combustion engineer's use of soap bubbles. They have found that the explosion of gasoline vapor inside a soap bubble enables the rate of flame spread to be measured more accurately. (87) More recently, aeronautical engineers (88) have employed glycerine-toughened soap films for studying the torsional rigidity of airplane beams in specially devised equipment.

Obviously, this brief report can hardly be considered a complete report on the newer uses of soap in industry. At best it will serve to cover some of the more interesting highlights, but enough has been told to indicate that soap is definitely on its way to becoming a most important industrial raw material.

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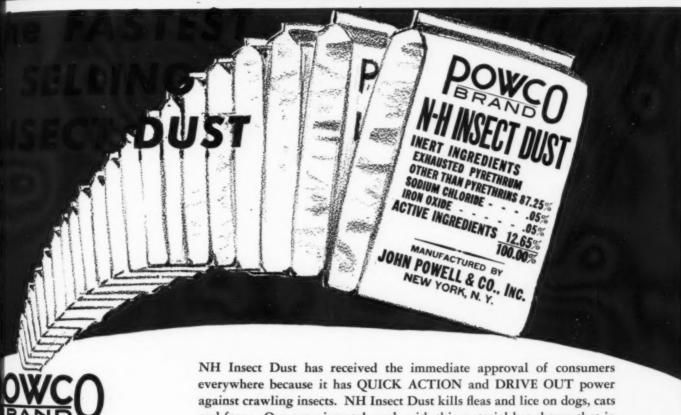
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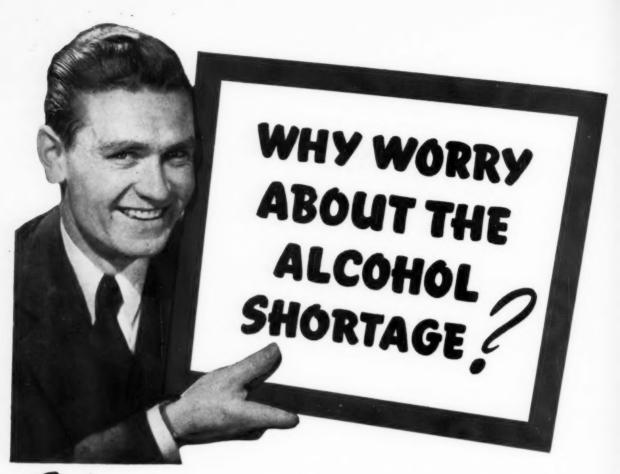
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944

ORGANIC CHEMICALS

Exports Can Absorb 10% of Post-War Output, Latin America Considered Logical Market

After twenty-five years of development, a second period of rapid growth and expansion of organic chemical industries is forecast by The U. S. Bureau of Foreign Commerce.

Pre-war, in 1937, Europe took one-third of U. S. organic chemical exports; Asia, Africa, Oceania almost a third; northern North America over a quarter; South America accounted for only a sixteenth.

ica accounted for only a sixteenth.

The war-time picture, while distorted by Lend-Lease and other special trade conditions, indicates the ever-growing importance of the Latin-American market, a trend which can be extended into the future, owing to increasing long-term industrialization in many South American countries. The large increases in exports of coal-derived dyes, glycerin, acetic acid and acetone to Western Hemisphere markets are significant in this

While the post-war picture in European, Asiatic, Australian and South African markets is still obscure, owing to unpredictable factors, such as policy towards defeated nations, influence of European cartels, etc., the Latin-American future is considered much clearer for three reasons: (1) permanent industrialization is increasing, quite apart from the war, (2) Latin-American industries will generally consume rather than produce organic chemicals, and (3) lessened competition from abroad is expected during at least the first post-war

years.

Thus, practically all Latin-American countries in 1941 recorded an increase of imports from the U. S. of acetic acid, acetone, aniline, benzol, camphor, carbon tetrachloride, citric and tartaric acids, formaldehyde, methanol, hexamethylenetetramine and the phenols.

hyde, methanol, hexamethylenetetramine and the phenols.

Best Latin-American Markets. Look first to Mexico, Brazil, Argentina, Chile and Peru for sales of organic chemicals. Brazilian plastic industries, for instance, are increasingly important prospects, as well as Brazil's textile industry, largest user of dyes in South America.

You may also wish to investigate the following consuming channels in Latin America: soap and candle factories, paper industries, tanneries, hat factories, bakery and dairy products, foods and beverages, cigars and cigarettes, drugs and pharmaceuticals, dry cleaning establishments, polishes, inks, perfumes, sugar and confectionery, insecticides and disinfectants, photographic supplies, smelters and concentration plants, petroleum refineries, cottonseed mills, flour mills, glass factories, rubber-goods plant, and manufacturers of iron and steel.

Germany dominated pre-war. Before the war, the major part of organic chemicals exported to Latin America were of European, and especially of German origin.

For instance, over 70% of Chile's and

For instance, over 70% of Chile's and Peru's napthalene needs, over 50% of Brazil's and near 50% of Venezuela's were furnished by Germany, which also supplied all of Ecuador's cresylic acid requirements, and 90% of that country's acetic acid imports, 60% of Uruguay's, 90% of Chile's and 75% of Peru's. Hexamethylenetetramine imports into Latin America were also supplied principally by Germany.

Importance to domestic economy. To maintain war-expanded facilities at a rate of employment, organic chemical industries may export as much as 10% of their output, compared to the 3% exported in 1937.

European competitors have in the past taken away this business from U. S. producers, owing to the lack of personal, technical service from U. S. firms. Regular exchange of visits between manufacturers and foreign agents, adaptation of sales policies to local conditions, warehousing and stock-carrying arrangements, as well as simple friendship, will also affect the success of U. S. exporters—and, indirectly, the level of employment and prosperity here at home.

Zinc Saves Steel

Zinc has long served to protect iron and steel structures from rusting—not only as metallic coatings but also as zinc pigments in metal protective paints. Recently there have been major developments in these paints, in which zinc pigments have earned an increasingly prominent part. A booklet summary of these developments, with chief focus on primers and shop coats, finds the principles involved applying to complete systems. Illustrations and typical list of Federal and U. S. Services specifications are included.

Compressed Disc Cereals

Cereal discs of favorite breakfast foods, 2½½ inches in diameter and fitting readily into the round "C" ration can, are now available in pre-cooked and pre-mixed form to the fighting soldier overseas, even those in active combat duty. These cereal discs, strong enough to be eaten dry without crumbling in the soldier's hand, are easily broken up for eating in conventional mush form. They are ½ of an inch thick and contain about two ounces of cereal.

Parachute Ration

A small compact parachute emergency ration fitting into the pockets of a vest worn under a filer's parachute harness has been developed for American airmen. The ration, containing about 1100 calories, is packed in a flat metal container measuring about 5½ inches in diameter, includes four one-ounce chocolate bars, one and one-quarter ounces hard sugar candy, one ounce bar dehydrated cheese and crackers, two bouillon cubes, two sugar tablets, three cigarettes, two packages soluble coffee, four pieces chewing gum, small container of water-purification tablets, small individual can opener . . . the complete package weighing 12 ounces. Two ration packages are issued each flier in combat areas for use in event he bails out.

Plastics-Rubber "Wedding"

The gap between plastics and rubbers has been closed for the first time by the "marriage" of plasticized vinyl chloride resins with certain butadiene-type synthetic rubbers to effect vulcanizable blends possessing most of the best properties of each material and creating a new and valuable series of elastomers. Products in which these combinations produce unusual advantages include plating racks and tank linings where they resist the action of corrosives and heat; roll coverings where oxidation, oils and heat are encountered such as in continuous metal processing lines. The field of applications is extensive.

Fish Oil vs. Blood Pressure

Scientists have a clew through Vitamin A to a possible strange substance in fish oil having power to reduce high blood pressure. Vitamin A itself may not be the answer since when irradiation was used in tests to destroy the Vitamin A in the concentrate, the vitaminless material still effected hypertension cures on animals used in the experiments. Work is now in progress to find the mysterious compound giving the cure.

New Compounds from Glycerine

A growing interest in new compounds from glycerine finds research progressing on the newer derivatives including a study of preparation of dehydroxy acetone, thio-glycerol, glycerol ether borates, also the ethers, glycerine formal, glycerine furfural and the chlorohydrins. Development of an improved method of preparing chlorohydrins from glycerine and sulfur monochloride has been initiated.

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August, 1944

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Metal Etcher

quickly etched with the new "tool room" metal etcher, recently announced. It is especially suitable for marking tools, gauges, reamers, dies, punches, jigs, fixtures, etc. The mark is burned into the surface and is depth-controlled by etching heat and writing

"Inside Story" On Liquid Level

A patented indicator is announced, made adaptable to 30-gallon steel drums in addi-tion to the 55-gallon drums on which it has tion to the 30-gation drums on which it has been successfully used for years. It tells at a glance the inside story about liquid level content of drums containing oil, solvents, etc. and avoids the danger of running short when deliveries are slow.

Lye Peeling Of Vegetables

Of interest to canners and dehydrators is a recent booklet on lye peeling, particularly of white and sweet potatoes and other root crops. Possible lye peeling of peaches is receiving research attention, as is the appli-cation of caustic soda to grapefruit segmentation . . . all precanning processes.

Sodium Pectate From Sisal

Sodium pectate, a gelatinous substance with properties similar to gum tragacanth, is being produced in the United Kingdom from sisal, in commercial quantities. 717

Lactic Acid Fog

A lactic acid fog, made by spraying lactic acid vapor, is being used in England to kill germs in the air. Germs of hospital blankets have been killed also by lactic acid vapor. The acid is vaporized by heating, also by spray in a watery solution. Both ways are effective.

Papaw as Preventative

Skin irritation from handling wool, preva-lent in the industry in Australia, is now being prevented by a preparation using the juice of the papaw.

Viruses Are Proteins?

Viruses, formerly supposed to be ultraviruses, formerly supposed to be ultra-microscopic organisms, are now considered complicated proteins, inanimate in nature, according to recent tests which show they retain their identity in the absence of all B vitamins.

Enzymes Potentialities

Development of penicillin has directed active research to other culture of fungi which may produce enzymes of great industrial value. Work now points to enzymes which may bring better leather goods. stronger textiles, new cheeses, turn wood into sugar and sugar into fats.

Technical Topics

ANTISPASMOTIC COMPOUNDS — Naphthylacetic acid amino-esters have been found to possess promising antispasmotic action in investigations carried out by a large American pharmaceutical manufacturer. In tests on isolated rabbit intestine, compounds such as the beta (N-piperidino) ethyl ester and betadiethylaminoethyl ester hydrochlorides of alpha- (a-naphthyl) buty-ric acid and the gammadiethylaminopropyl ester hydrochloride of phenylalphanaph-thylacetic acid showed activity in dilutions of 1 to 1,000,000 and 1 to 2,000,000.

THIOUREA IN PROCESSING - Thiourea was found to be an effective protective agent of vitamin C during foodstuffs proc-essing in work recently carried out in Ireland. It was found that of the simple solutes tested which might protect ascorbic acid from oxidation in the presence of copper, from exidation in the presence of copper, thiourea was outstanding, and that pharmacologically it displays none of the effects possessed by certain substituted thioureas and is thought to be excreted unchanged by the

WEED CONTROLS—Dinitrocresol com-pounds were recently suggested in Britain as effective weed control chemicals. Ammo-nium dinitro-orthocresol was stated to be the most effective salt of the group. A spray of dilute copper chloride solution was also de-clared to have been shown a good eradicat-ing agent of numerous weeds from cereal

COATING RESINS - Cyclohexanol and COATING RESINS—Cyclohexanol and hydroxybenzoic acid are declared to form resins suitable for use in enamels and other coating compositions in a recent British patent. Small amounts of sulphuric acid catalyze the reaction, to form compounds varying from soft, sticky materials to hard, brittle resins. The products are soluble in the organic solvents normally employed in paint practice. paint practice.

ZEIN ACETATE—Zein acetate has been found to produce films and coatings which tound to produce films and coatings which are stronger, more flexible, and more water resistant than those employing zein alone. Acetic anhydride, glacial acetic acid, acetyl chloride, and ketene are suitable acetylating agents for zein, and catalysts such as sulphuric acid or anhydrous sodium acetate can be used to speed the reaction.

ANHYDROUS MINERAL ACID-Monofluorophosphoric acid is being offered com-mercially by an American chemical manu-721 form. The compound is described as an oily liquid showing some of the analytical reac-tions of sulphuric acid, but being non-oxi-dizing, contrary to concentrated sulphuric

PROVIDE IMPERMEABILITY - Syn-PROVIDE IMPERMEABILITY — Synthetic resin compositions are now being offered to close porous areas of magnesium, aluminum, and iron castings, making them impermeable to gasolines, oils, solvents and fumes. The metal impregnating resin is applied in solution in monomeric styrene under vacuum and pressure, and then baked to thermoset the resin.

TIN RUST COUNTERACTED—Tinplate rusting is counteracted by simple and in-expensive method recently described in a British trade journal. The treatment consists of running the tinplate through a hot oxidizing and detergent solution which forms an invisible protective film on the surface. 729

SEBACATE PLASTICIZER sebacate has been found a valuable plasti-cizer for synthetic rubber and other elasto-mers employed in the war program. Princimers employed in the war program. Principal value of the sebacate over other plasticizing agents has been its property of maintaining flexibility in the compound in which it is incorporated at sub-zero temperatures, as are found in the Arctic and at high altitudes. Many of the plastic and soft rubber materials perform satisfactorily at normal temperatures, but harden and stiffen when exposed to low temperatures.

730

NICOTINIC ACID—Nicotinic acid. con-stituent of Vitamin B complex, is obtained from coal tar and bone oil by a process now 731

Every effort will be made to furnish additional information on these articles. Where such information is not obtainable, we will refer inquiries to the original source of the article. Write to National Can Corporation, 110 East 42nd Street, New York City. Please mention the number at end of articlealso name of the magazine you saw it in.

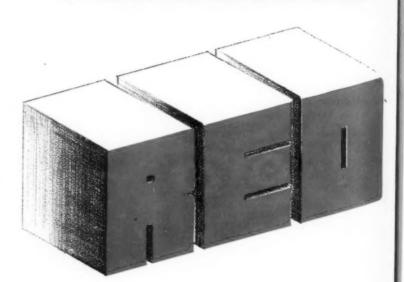
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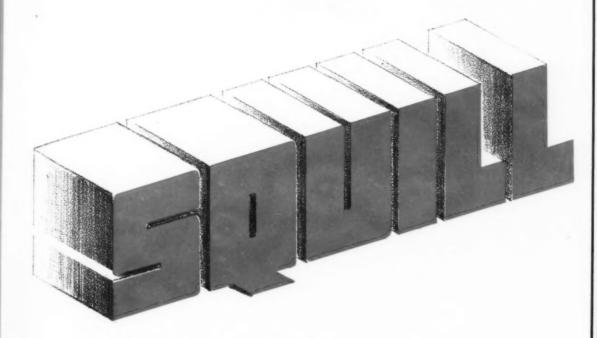
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Yet this new high explosive weapon is small and light enough to be carried in a soldier's pocket as a hand

You and this can are old friends. You, too, have used it to eliminate pests. Before the war it was a can for insecticides. After the war, it will again carry chemicals to protect your garden against insects, your clothes against moths, your children against infection.

SAVE TIN CANS-HELP CAN THE AXIS

It will carry new and better insecticides, too. (The industry is learning lots of new things in this war!) And these insecticides will come to you full strength-safely packed in

To do our war job, we've developed new ideas and new skills, too. That's and better things in Continental cans.

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If you send us a gallon of your unperfumed spray we'll show you how clevcrly it can be done. Compliment: of the house, of course. When the "old man" dons his
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insecticides! The battle between
the killing agent and the
perfume that masks its malodor
is an old one. Our perfumechemists, long experienced in
this field, have the answer.
They blot out the killer with a perfume that blots itself out instanter!

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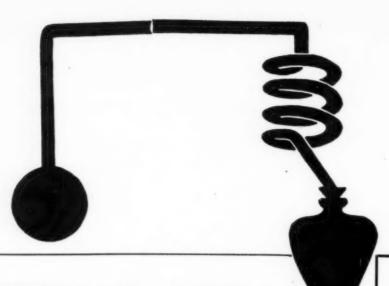
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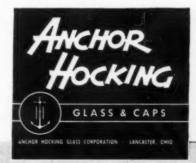


Anchor Hocking offers a complete line of standardized amber and crystal glass containers of every size and type, all light, strong, safe and economical—a container for every conceivable packaging purpose. And among the 5 types of Anchor metal and plastic caps suitable for drugs and chemicals, there is one best suited to your purpose—for dependable airtight, leakproof seals and numerous reseals if required. While both containers and closures are available separately, it will pay you to rely on Anchor Hocking for your complete package; for then the responsibility for your container and closure requirements is centralized in one reliable firm; supply and service are coordinated; time and money are saved; and the facilities of our completely equipped Experimental, Packaging Research, and Engineering Laboratories are available to you.

"Meet Corliss Archer" every Thursday Evening, entire coast-to-coast network CBS

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W. F. WILSON, one of Anchor's ablest and most popular men, has been a member of the Anchor family for 17 years.









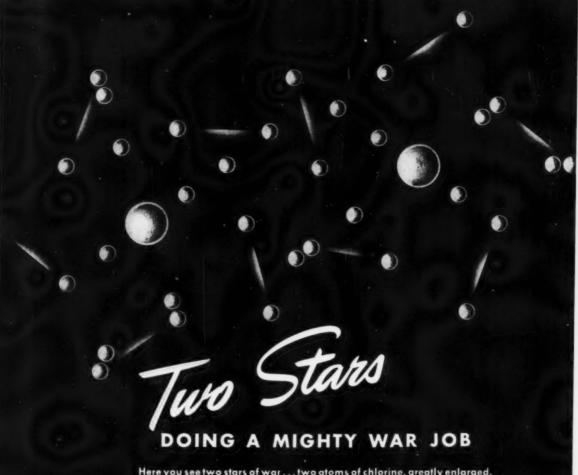
With the 1944 insecticide season approaching its close, most manufacturers are breathing sighs of relief that they have been able to cope as well as they have with well-nigh impossible conditions, and wondering whether the next season will bring improvement or just more problems.

Happily, the signs point to somewhat easier conditions, even though it is too early to be specific as to dates or details. Still, a reasonable degree of optimism is permissible.

Most manufacturers, therefore, will be inclined to delay definite decisions and commitments to the last possible moment in order to be in a position to take full advantage of any last-minute favorable turns in the raw materials or containers field.



DODGE & OLCOTT COMPANY 180 VARICK STREET . NEW YORK, N. Y. BOSTON · CHICAGO · PHILADELPHIA · ST. LOUIS · LOS ANGELES



Here you see two stars of war... two atoms of chlorine, greatly enlarged. In peacetime, they come to you here $\rightarrow CI - CI \leftarrow$ and here, in Du Pont PARAPONT* paradichlorobenzene.

Today, these atoms are helping to fight our greatest battle in history. They're being used in the manufacture of plastics, synthetic rubber, anti-knock gasoline, dyestuffs, drugs. And in fire-extinguisher fluids, refrigerants, dry cleaning solvents. They're being used, too, in the bleaching of textiles and paper, and in the degreasing of aluminum, steel and other metals for war.

Until Victory Day, these two atomic stars must stick to their mighty job of war. But some day soon, we hope, they'll return with our men from the battlefront. Then again, PARAPONT will be available in quantity to serve you—as pure, as uniform, as adaptable to your many needs as in the past. E. I. du Pont de Nemours & Co. (Inc.), Organic Chemicals Department, Wilmington, Delaware.

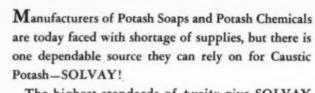
*Trade Mark

DU PONT PARAPONT

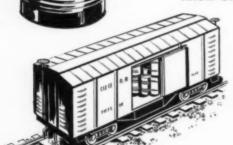


BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY





The highest standards of purity give SOLVAY Caustic Potash, solid or flake, EXTRA quality advantages. Specify SOLVAY Caustic Potash—your dependable source of EXTRA quality. Prompt deliveries assured. Convenient size containers.



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KNOCK-DOWN AND STAY-DOWN POWER FOR YOUR SPRAYS WITH

VELSICOLS AR-50 AND AR-60

Positive performance is what the VELSICOLS will give your household and live-stock sprays. Flies and other insects are down to stay when VELSICOL sprays hit them; after 24 hours very few revive—at the end of 48 hours most of those counted as moribund are dead. Thus the effective kill of VELSICOL sprays is considerably higher than is indicated by the usual methods of testing. VELSICOL blends feature in addition to their outstanding toxic activity powerful repellent action with long lasting residual effect. The VELSICOLS are stable materials in all types of containers and their activity is not affected by time or temperature.

It will pay you, as it has many of the largest and most exacting manufacturers, to investigate the merits of AR-50 for your household sprays and AR-60 for your livestock sprays.

Samples and suggested formulations upon request.

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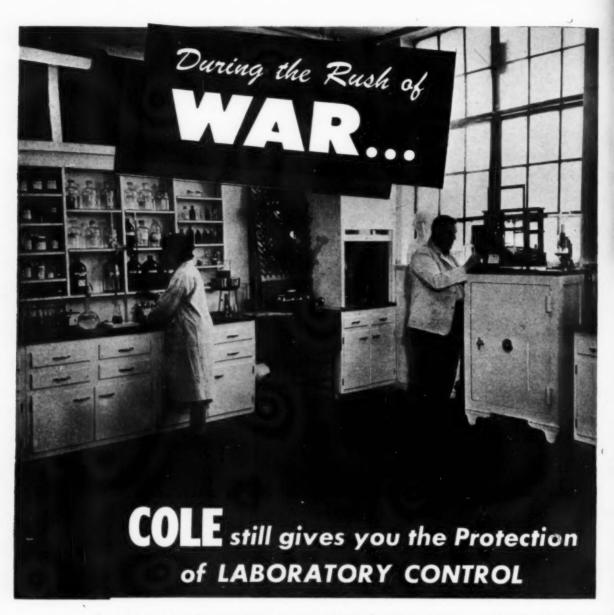
AR-60—DDT Combinations (When Available)

Research conducted with these two products has indicated that VELSICOL is the ideal solvent for DDT adding its selective action where DDT alone has been found ineffective in the control of various insects.

AR-60 — Rotenone Combinations

The value of AR-60 as a solvent, activator and extender for rotenone, and rotenone bearing roots enables dust or spray manufacturers to reduce the rotenone content in their products by 50% to 75%, and maintain maximum effectiveness against all insects normally controlled with rotenone.





A NEW PRODUCT DEVELOPED BY COLE LABORATORIES

Our Laboratories have just completed the development of a white, odorless Insecticide Base Oil, which meets the following Government Specification for cattle and veterinary spray:

| Say Univ. @ 100° F. | 38/55 Seconds | Second

This Insecticide Base Oil may be had @ \$.22½ per gallon in 55 gallon drums. plus \$6.00 deposit on the drum. Price quoted is F.O.B. Long Island City, New York. Sample may be had upon request.

COLE LABORATORIES

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DAVID DIETZ, Science Editor of Scripps-Howard Newspapers, Author, Pulitzer Prize Winner



EXTRA STAMINA FOR CONCRETE. Vinsol* resin helps keep concrete surfaces smooth and long-wearing. Interground with cement, it enables concrete to withstand scaling and corrosion due to frost and thaw and the action of ice-removing agents.



stretching rubber supplies is one of Hercules' contributions toward rubber conservation. Solvenol* is used as a penetrant, softener, and swelling agent in the reclaiming of scrap rubber. It is now under allocation for this war task.



CLOSE SHAVE FOR PIGS. In packing plants, pigs are coated with a special resin, Brisgo*. When the Brisgo, applied hot, has cooled and congealed, it is peeled off like a banana skin and with it comes every hair and all the stubble.



RESIN AGAINST THE SEA. Pentalyn* resin permits use of domestic linseed instead of unobtainable foreign oils in making the tough, saltwater-resistant protective coatings essential to our ship-building program. Makes more paint with less critical materials.



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No where is sanitation more imperative than in the dairy products manufacturing industries. Here flies and insects are actual saboteurs.

EVERY DAY from spring to fall, over 20,000 dairy products plants use huge quantities of sprays and insecticides. Here is a vast, prosperous market for your products . . . a market you'll enjoy doing business with . . . and a market that will stand by you, now and after the war . . . because you can't explain business cycles to a cow.

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Announcing the acquisition of (OMPAGNIE DUVAL by S.B.PENICK & COMPANY

The purchase of Compagnie Duval, 121-123 East 24th Street, New York, by S. B. Penick & Company is announced.

The Duval Company was established in 1914, and over the years has developed an enviable reputation for high quality standards in its perfume specialties, flavor concentrates and allied products, and has successfully established its line in the export field.

The Duval personnel will continue with this company to serve its many domestic and foreign friends. Substantially enlarged facilities will enable the unit to increase its service to the varied industries using its products.

Compagnie Duval will operate as a unit of our ESSENTIAL OILS AND AROMATIC CHEMICALS DIVISION

Through this acquisition, in combination with our facilities in the production of botanical drugs and fine chemicals, we look forward to serving our extensive export and domestic trade fields to their better advantage.

S. B. PENICK & COMPANY

50 CHURCH STREET • NEW YORK 7, N. Y. 735 W. DIVISION STREET, CHICAGO 10, ILL.

BUY WAR BONDS AND STAMPS-FOR VICTORY

New 1944 O.T. I. available . . .

Supplies of the new 1944 Official Test Insecticide for evaluating insect sprays by the Official Peet-Grady Method are now available from the office of this Association. The 1944 O.T.I. is priced at \$5.00 per dozen six-ounce bottles, plus shipping costs, to members of this Association. To others, there is an additional service charge of \$1.00 per dozen. Single bottles are \$1.00 each. Check with order is required.

of insect sprays by the Peet-Grady Method for the period from June 1:1944, through May 31, 1945.





National Association of Insecticide & Disinfectant Manufacturers, Inc.

110 East 42nd Street

New York

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We Dare to Say It Will Give YOUR FLY SPRAY



MM&R helps spray-manufacturers remove the one major bugaboo of most "bug" sprays —their typically tell-tale odor.

With the new PERFUME OIL FRUIT BERRY MM&R, odor becomes a merchandising asset, instead of a sales liability . . . a refreshing addition instead of a necessary evil.

This utterly new and different product is both an odor neutralizer and a perfume. Not only does it absolutely neutralize the odors of toxic agents, it provides the finished spray with (we repeat) a refreshing and welcome fragrance . . . a delicate odor reminiscent of ripe, ready-forpicking berries on the vine.

Remarkable, indeed, that so light a fragrance can cover heavy and penetrating odors. You'll marvel even more after you have made your first tests with—

PERFUME OIL FRUIT BERRY MM&R

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An ADVERTISING AGENCY Describes

Institutional Market!

"Every single segment of the institutional field shows promise of being a bigger customer than ever before.

"The institutional field consists of those businesses and services whose functions are the mass housing and mass feeding of individuals. The major segments of this market include hotels, hospitals, restaurants, schools and colleges, industrial cafeterias, clubs, homes and asylums, public institutions and similar establishments. In addition it includes a vast array of government institutions such as veterans' hospitals, office buildings, welfare facilities and others.

"... There are approximately 300,000 institutions in the United States containing a total of 4,350,000 rooms. Their total floor area is 3,250,000,000 sq. ft. They employ over 4,000,000 workers. During a normal operating year the institutional field ... is responsible for the purchase of \$6,400,000,000 worth of maintenance and operating supplies and equipment. In the immediate post-war period this figure will reach \$8,500,000,000, according to most recent surveys.

"As huge as the institutional market is today, it is going to be even greater after the war. The rapid growth of such influences as hospital insurance . . . the eating-out habit . . . the pent-up travel urge . . . the war boom in industrial cafeterias . . . all these and others . . . are exerting an upward pressure on the institutional market and every single segment of this field shows promise of being bigger than ever before . . . There is your institutional market! I strongly urge you to go after it."

The foregoing is from a talk by Mr. M. J. Evans, chairman, Evans Associates, Inc., advertising agency, Chicago, describing the institutional market before the June, 1944 Convention of manufacturers of cleaning compounds, disinfectants, insecticides and sanitary chemicals. Mr. Evans' photo, addressing this group, is shown at the right.



INSTITUTIONS Magazine is the only publication



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ZIP-ON Rubless FLOOR WAX

AN especially high-grade emulsion wax for the trade . . . designed for easy and fast application . . . giving high gloss . . . unusually water resistant . . . maximum non-skid properties . . . will not jell or become pasty in storage . . . gives a durable and attractive finish . . . can be sold to industrial and institutional customers with full confidence . . . write us for sample and prices . . .

Our full line of floor-treatments also includes paste and liquid solvent waxes, floor sealers, gym finishes, etc., as well as metal and furniture polishes... we specialize in bulk and private brand products for the trade.

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SANITARY PRODUCTS

A SECTION OF SOAP

Official Publication

National Association of Insecticide & Disinfectant Manufacturers

HAT too much ballyhoo about aerosol insecticides among the armed forces of the United States in the Pacific may do this type of insect killer irreparable damage in the post-war markets is a conclusion which we draw from two or three scattered reports from that area. From the label on the aerosol packages and from verbal instructions and explanations by officers in charge of insect control, the average soldier or sailor is led to expect entirely too much in the way of performance. The product has been in some instances compared to magic in the destruction of insects and its limitations have not been pointed out. Too often used incorrectly, its ineffectiveness under such conditions damns it completely for all purposes in the minds of the men. In short, ballyhoo has built up an expectation of performance which cannot be attained. This situation should be corrected as a means to better insect control for and by the armed forces and to avoid unjust damage to the reputation of this valuable type of insecticide.



EW specifications for sanitation materials, insecticides, disinfectants, and the like, which come out of Washington from government bureaus from time to time, indicate still that some are being written by persons who have very limited knowledge of the scope and type of products in question. The bureaus who still leave specification writing to government clerks or who accept unchallenged the views of a single manufacturing supplier, perhaps with an

axe to grind, might well look further into their current procurement of these materials.



S reports persist that pyrethrum will again be available for civilian uses, both agricultural and household, late this year, a new set of conditions faces the average manufacturer of insect sprays, not to mention agricultural products, to which he may soon be forced to give close thought. Things have changed since he last used a regular 20 to 1 pyrethrum extract, with or without the addition of synthetics from five all the way to one hundred per cent. Today he has standardized on some type of synthetic. What shall he do if pyrethrum is available? Where is DDT going to fit into the picture and how soon will it be available for civilian uses? If he goes back to using pyrethrum in whole or in part, shall he use the old 20 to 1 extracts or shall he take advantage of the war development of the purified 20 per cent pyrethrins extracts in his insect sprays? They say that the latter makes crystal-clear stainless sprays. But if aerosols develop widely for civilian use later, will there be enough of this to go around for fly spray manufacture? Shall he sit tight on his ynthetic formulas until he sees exactly what is going to happen,—and if he does will he "miss the bus?"

Maybe it will just be better to wait and see if the pyrethrum for civilian uses really shows up later this year,—and if it does, take two aspirins and start figuring all over again.

ARE HOUSEHOLD INSECTICIDES

LUXURIES?

BY OSCAR F. HEDENBURG, Mellon Institute

HE many, fine people in this great country of ours may be arranged in many categories. They may be grouped according to the prevalence, or absence of luxuries. In many a town some of the people are forced by circumstances to live on the wrong side of the tracks, where the bare essentials of life, health and subsistence are the rule, whereas on the other side many comforts and pleasures are added to the essentials. The Colonel's lady is accustomed to many things, whereas Bridget often finds it hard to acquire even the things that make life possible. Between these extremes and also within groups many articles vary in frequency of use according to likes, habits, experience, knowledge and wealth. Luxuries and necessities occur side by side. It is sometimes difficult to distinguish between them, for a luxury to one may be considered a necessity to another person, so that the term luxury is often used in a loose way. To a few, nothing is a luxury for to them a thing may be simply unobtainable.

Luxury and extravagance are often used with synonymous meaning. Luxury, however, has a more accurate significance of anything that contributes to comfort, or pleasure, but is not necessary to life, health or subsistence.

If a household insecticide is a luxury then the foregoing definition can be stated in particular: Luxury—a household insecticide contributes to comfort, but is not necessary to life, health or subsistence. But it will be pointed out that household insecticides have an influence on health, and perhaps on life itself, by helping to control insects which may carry disease organisms. Since some insects may carry

disease organisms, which are dangerous to health and life, the destruction of such insects is desirable and no suitable material for doing this can be termed a luxury.

Mankind has had many ideas about insects. The ancient Philistines believed that flies were holy as shown by the name of their god, Beelzebub, meaning Lord of Flies, who was a sunworship god. The coming of summer was accompanied by increase in the number of flies. The sun-god made flies more prevalent and so they were holy.

Some present day people believe that ancestors may be embodied in insects which must not be destroyed by man, but allowed to develop so that the transmigration of souls may not be hampered. Such people are willing to forego comfort, and perhaps lose life, for their beliefs.

Insects were supposed by the ancients to appear by spontaneous generation from decomposing matter. They had not progressed enough, nor were they curious enough, to understand the things happening around them. An idea would be formulated by them about an observation and the idea often became a belief. Inaccurate thinking was not confined to former days.

The ancient Greeks worshipped Zeus in one manner as an averter of flies, or fly-catcher, and this idea had some connection with the worship of Hercules. The idea that flies are harmful may have been held by some ancient people.

Until recent times accurate studies of insects were not made. Malaria caused the death of millions throughout the centuries with no knowledge that the disease was transmitted by certain mosquitoes. Malaria was believed to be due to bad air which was supposed to occur with the sinking of the sun. So people closed themselves up in their houses to keep out bad air. They did exclude many mosquitoes by that means, but those that were inside the house, or entered through small openings, were not considered to be harmful, but only annoying.

One of the causes offered for the downfall of Ancient Rome was the increase in the prevalence of malaria. The same disease is believed to have contributed to the downfall of other ancient states. Malaria has made many a fertile land uninhabitable, or lowered the vitality of people and prevented them from developing into a strong nation.

The discovery that malaria was spread by mosquitoes was made during the lifetime of persons now living. Understanding the cause and history of the disease, people can now use suitable means for control so that malaria can be greatly reduced in, or eliminated from, formerly polluted areas. Yellow fever and dengue are mosquitoborne diseases which disappear with control of the mosquitoes that transmit them.

OSQUITOES transmit other diseases which are either already present in the United States, or may be carried here by persons coming from foreign lands. Filariasis, a nematode parasitic disease, is present in the United States and is transmitted by a certain mosquito, different from that which carries malaria. Other protozoan and nematode diseases may be introduced which may be spread by suitable mosquito hosts.

The common house fly was considered a useful insect because it ate

Before 30th m'd-year meeting, Natl. Assn. Insecticide & Disinfectant Mfrs., Chicago, June 13, 1944.

fiith. This insect and other insects do help to remove dead bodies which would be unpleasant to have around. The annoyance of their presence was their only known bad feature. But now it is known that the inoffensive-looking fly may transmit disease from the ill to the well. Now people try to exclude flies from their homes, destroy them and take means to prevent their development.

Amoebic dysentery is fly-borne. There may be new and more virulent forms introduced from foreign places. Any disease that offers infective discharges for flies to walk on, or feed on, may be transmitted to healthy persons by flies. It has been proved that the virus of infantile paralysis is carried by flies. Even the stable fly is suspected.

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A nematode disease, onchocerciasis, is spread by three species of black fly, or simuliids. This disease occurs in Central Africa as well as in Mexico and Guatemala. It causes serious eye trouble with eventual blindness. The disease does not occur in the United States because the known carriers do not occur here, but there are 27 species of Simuliids, or black flies, that might be biologically adapted to serve as intermediate hosts.

Disease organisms carried mechanically by flies include germs of typhoid, paratyphoid, cholera, tuberculosis, leprosy and anthrax which have been found on flies and in fly "Specks." They may transmit ophthalmia (sore eye). Some parasitic worms, tapeworms, hookworms, and rarer forms, may be transmitted by flies

Farmers' Bulletin 1408 of the U. S. Department of Agriculture makes this statement about the disease carrying ability of the fly: "In the case of over 30 different disease organisms and parasitic worms, actual laboratory proof exists, and where lacking is replaced by circumstantial evidence amounting almost to certainty."

Other flies than those mentioned above may also transmit diseases. In Puerto Rico it was found that a certain species of ant can carry dysentery germs on its feet for 24 hours after walking across infected material and thereby can spread the disease to food. These ants do not occur so far north as Washington, D. C. Other species of ants were not tested. Ants are great travelers and investigate and walk over many things in their travels before entering homes.

The oriental, German and American cockroaches may serve as intermediate hosts of a cestode, a common tapeworm of mouse and rat, and also found in man. The German roach may transmit a nematode, a worm that burrows in the mucosa in the vicinity of the oral cavity. These are rare, but the habits of cockroaches lead them into contact with filth and food so that they may carry mechanically and transmit by parts of the body and feces pathogenic bacteria, protozoan cysts and helminthic ova (worm eggs).

The bedbug has been suspected of transmitting disease, but evidence is difficult to get. Bedbugs are capable of passing on the organisms of plague, leprosy, tularemia, relapsing fever, yellow fever and some other diseases according to laboratory tests. Some disease germs may be transmitted to man by crushing an infected insect so that the internal fluids of the bedbug thus come in contact with the person.

THE story of the harmfulness and destruction wrought by insects to man, animals and food crop would fill a large book. Many pages of journals and books are required each year to describe the findings of workers. The losses in food crops and animals due to the action of insects run into millions of dollars per year. There are many and various methods of control of which insecticides form an important group.

How shall we evaluate the losses due to insects in their action on people? No sum of money would be acceptable as an expression of losses. Loss of time due to illness might be expressed in man-hours or days. But death can only be expressed in sofrow, tears and the broken lives of those who remain.

Household insecticides can mitigate the troubles due to household insects and make living much more comfortable and safer. These insects were shown to be capable of transmitting organisms that are detrimental to health and in some cases life itself. If a child is bitten by a dog, the incident may be first page news. But when a disease-infected mosquito bites a child, there is no furor raised except by the recipient of the bite. Wild animals of large size have claimed many victims in the history of the world, but it is quite safe to say that insects have been the means of causing more deaths by far than the large animals. In the early part of the 14th century over 25 per cent of the population of Europe died of the black death transmitted from rats to man by fleas. Fleas can be killed by household insecticides. In the early days of this country, yellow fever was prevalent in the coast cities. The yellow fever mosquito can be killed by liquid insecticides. Flies that carried infantile paralysis have been captured in the open. Not all mosquitoes transmit malaria and yellow fever, but other diseases may be transmitted. No one is going to wait until an insect has been proved to be a carrier of this or that disease organism. Insecticides are being used to kill insects that enter homes and they will be more extensively and intensively used as time goes on.

Insecticides for use against household insects are not used more extensively and effectively for several reasons—ignorance, prejudice, beliefs, low purchasing power, availability, improved sanitary conditions, improper

(Continued on Page 123)

The role of household insecticides in insect control and disease prevention classes them definitely as necessities, says this authority



QUATERNARY AMMONIUM GERMICIDES

By Adrien S. Du Bois
Onyx Oil & Chemical Co.

THE antibacterial action of cation active agents was first mentioned by Hartmann and Kagi (1) in 1928, Domagk (2), in 1935, published his work on a mixture of higher alkyl dimethyl benzyl ammonium chlorides.

dimethyl benzyl ammonium chlorides. Since that time, a large number of investigations, covering a wide variety of derivatives have been reported

of derivatives, have been reported.

In the United States, the first high molecular quaternary ammonium germicide was placed on the market in 1938. A few others have appeared since that time and all have found a gradually increasing demand. During the present emergency, their use is practically limited to the Armed Forces and only a trickle finds its way to the civilian trade. However, sufficient interest has already been aroused to prompt critical examination of these compounds.

In comparison to other germicides, such as the phenols, the use of which dates back to about 1850, the quaternary ammonium compounds are still a novelty in the antiseptic field. Hence, their clinical use cannot yet be as firmly established on experience. The most controversial aspects of the use of these compounds will be examined here in an attempt to determine whether they have any serious shortcomings.

Generally, the quaternary ammonium compounds are colorless, odorless, non-staining, non-corrosive and have a slightly bitter taste. They are soluble in water and in a large number of organic solvents. They are compatible with salts, acids, and alkalies. They exhibit a remarkably high antibacterial power against both gramnegative and gram-positive organisms, and in the dilutions recommended for use, they are non-toxic and non-irritating.

Probably the most significant criticism which can be leveled at the quaternary ammonium germicides is the fact that their anti-bacterial action can be reversed by anion active agents. This behavior has been the subject of studies by Grumbach (3), Neufeld and his collaborators (4), Valko and DuBois (5), as well as by Miller and his collaborators (6). It is important to remember that all these in-

vestigators have demonstrated that reversal can be effected only under certain particular conditions. have emphasized that this reversal could not be considered as a failure of the quaternary ammonium compounds, since the conditions met in actual practice are very unlikely to lead to reversal. We found (5) that it was impossible to reverse the action of a 1:3000 dilution of a mixture of alkyl dimethyl benzyl ammonium chlorides, after it had acted on the bacteria for more than 30 minutes. We used sodium dodecyl sulfate as antagonistic agent. antagonistic agent. Contrary to our experiences, Grumbach and Neufeld have been able to effect reversal by the use of soap. However, in their tests the period of contact between the antiseptic and the bacteria was never more than 5 minutes. The anti-bacterial action of nearly every other type of disinfectant, for instance, mercury salts, dyes, etc., has been shown to be likewise reversible. There has. as yet, been no report indicating that the action of phenol can be reversed. It appears, however, that the reversibility of the action of a chemical disinfecting agent can be demonstrated as soon as a suitable detoxicating agent is found. Such a detoxicating agent should inactivate the germicide without harming the bacteria.

The objection arising from the incompatibility of quaternary ammonium compounds with anion active agents such as soap, falls in line with the phenomenon of reversal. These observations clearly warn that soaps should not be used, either simultaneously or in an after-treatment, along with quaternary ammonium germicides. This incompatibility does place some restrictions on the use of the quaternary ammonium germicides. These are not too serious, since quaternary ammonium compounds have excellent detergent properties of their own.

THE activity of quaternary ammonium compounds in the presence of organic matter also necessitates some comments. Klarmann and Wright (7) have demonstrated that two commercial quaternary ammonium germicides

retained only between 25 and 80 per cent respectively of their antibacterial power against S. aureus, and between 3 and 15 per cent respectively against E. typhi in the presence of 10 per cent normal horse serum. The phenols, on the other hand, retained between 15 and 80 per cent of their effectiveness against S. aureus, and between 40 and 90 per cent against E. typhi, under the same conditions. These results the same conditions. These results show that these two types of germicides behave similarly in the presence of serum. It is impossible, at the present time, to ascertain the true significance of these tests. Organic matter is very frequently encountered in actual practice, but its nature and amount does not necessarily correspond to those used in the test.

Although activity in the presence of serum has, for a long time, been accepted as a criterion of the practical effectiveness of germicides, the impossibility of correlating this test with actual practice casts some doubts on its value. Other tests have been devised which claim to give a truer evaluation of antiseptics, among which are the chicken embryo test of Salle (8), and the "Toxicity Index" test of Welch and Hunter (9a). The toxicity index is the ratio of the highest dilution necessary to inhibit the phagocytic activity of blood to the highest dilution killing S. aureus in the presence of blood. The quaternary ammonium compounds tested according to this procedure, showed a toxicity index ranging from 0.3 to 0.5 (9b), while the phenols tested all exhibited indices of from 1 to 5 (9a). Whereas the serum test may, in some cases indicate advantages for the phenols, the toxicity index would point to the superiority of the quaternary ammonium germicides. This emphasizes the fact that no single test can be

Three Papers on Quaternary Ammonium Disinfectants from



used to disqualify a germicide and it further stresses the need for more suitable methods of evaluation.

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A question which has aroused a great deal of discussion in the past is that of chemical disinfection versus sterilization. The evidence presented so far indicates that complete sterilization by chemical means is unlikely and the phenomenon of reversal dis-cussed here certainly supports this conclusion. However, we are faced here with the problem of defining terms properly. If by sterilization, it is meant that all organisms without exception are to be killed, then it seems that no chemical disinfectant has succeeded in achieving that end, and that prolonged heating is necesand that prolonged heating is necessary. However, if the more common interpretation of the word sterilization is taken, that is the effect of heating with superheated steam for 20 minutes, then it appears that sterilization by means of quaternary ammonium germicides can be effected. Brekenfeld (10), using a procedure which closely duplicated surgical practice, has shown that boiling with a 1 per cent solution of "Zephirol" is as effective as heating with superheated steam for the stealignting of interpreparts. for the sterilization of instruments.

ONE of the interesting properties of the quaternary ammonium com-pounds is their property of adhering tenaciously to vegetable or animal matter. This is especially valuable in the field of hand disinfection. When the hands are washed with solutions of these compounds, a film forms on the hands which is difficult to remove by This is an appreciable advantage, in that it renders the hands more or less permanently bacteriostatic. These same considerations apply to gloves treated with quaternary ammonium compounds.

the Recent Mid-Year Meeting of the N. A. I. D. M. Held in Chicago

The tendency to adhere to vegetable matter suggests a very interesting application, namely the impregna-tion of fabrics with quaternary am-monium germicides to render them durably antiseptic. Although, at least theoretically, every type of germicide may be applied to fabrics for that pursubstantivity is a property the quaternary ammonium compounds alone. It is customary to use the Agar Plate Test to measure the effectiveness of compounds for this special application. The width of the halo is usually assumed to represent the relaally assumed to represent the relative efficiency of the antibacterial agent used. Tobie and Ayres (11) have shown, using the Agar cup test, that there is no relationship between the width of the halo and the phenol coefficient of the germicide tested. We have repeatedly observed a similar behavior when comparing fabrics treated with quaternary ammonium compounds by the Agar Plate Test. Obviously, the problem is not primarily one of antibacterial action, but more so, one of diffusion. The importance of the width of the halo is apparently overestimated and the establishment of a definite halo, regardless of its

width, should be considered not only as a necessary but also as a satis factory criterion of the bacteriostatic effect.

In conclusion, it appears that even if the quaternary ammonium germicides have certain limitations, their unique combination of valuable properdoes present decided advantages for numerous important uses.

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CATIONIC GERMICIDAL AGENTS

By Charles G. Marshall Winthrop Chemical Co.

PRIOR to World War I, terminal disinfectants for general cleaning use, were limited to a few preparations such as chlorinated lime, certain coal tar disinfectants and several oxidizing and reducing agents with germicidal characteristics. Dakin's Solution, a sodium hypochlorite, found wide use during this conflict as a sanitizing agent, not only of inanimate objects but as a skin and mucous membrane disinfectant. Refined coal tar preparations, capable of emulsification with water, also became popular during the same era.

In the late 20's, pine oil became generally available through the devel-opment of steam distillation procedures, using stumps and slash of our Southern pine forests. As you all know, pine oil is capable of emulsification with water in the presence of sulphonated oils, giving a pleasantly odored product. The bactericidal characteristic of such pine oil disinfectant, however, is very low when compared to many others. Par-alleling the development of pine oil

preparations, the mercurial compounds were making inroads upon the use of iodine and hypochlorites for skin and mucous membrane disinfection.

It was during this time that pub-lic health departments and agricultural divisions of state and federal govern-ments, interested themselves in the establishment of a philosophy which was the forerunner of our present day quality control in all food processing industries. The development of inspectional activity on the part of these agencies gave great impetus to the use of chlorine-bearing disinfectants in the industries mentioned. Several hundred publications appeared within a span of a few years, demonstrating the effectiveness of chlorine compounds in controlling the bacteria population asso-ciated with food processing and handling. The well known limitations of these chemical sanitizing agents also became well established during this

In the middle 30's, wetting agents were receiving considerable research

attention and as a result several were discovered to have definite germicidal potency. It is the purpose of this article to review the development of these quarternary ammonium compounds in the role that they have played and will play in the field of disinfectants.

The ideal disinfectant has not yet been discovered. However, the cationic germicidal detergents which have been studied and developed commercially during the past five years, more nearly approach the ideal than any other sani-tizing agents which have been in gen-Of course specifications an ideal disinfectant are debatable, but most will agree that the following characteristics approach the ideal: (1) High germicidal activity, (2) Relatively non-selective, (3) Relatively non-toxic, (4) Non-corrosive, (5) Rapid in action, (6) Effective in the presence of organic matter, (7) Chemically stable, (8) Non-injurious to skin and mucous membrane, (9) Bacteriologi-cally stable, (10) Odorless, (11) Taste-(12) Non-volatile, (13) Surface depressant, (14) Fungicidal, (15) Capable of easy chemical identification.

The first cationic germicidal detergent studied extensively was a quaternary ammonium compound having the formula alkyl-dimethyl-benzylammonium chloride. This high mole-cular organic chemical approaches the disinfectant. There are compounds which have been developed since, such as cetyl-trimethyl-ammonium bromide; dimethyl-octadecenylethyl-ammonium bromide; cetyl py-ridium chloride, etc. with comparable characteristics which also approach the ideal specifications mentioned above, inasmuch as they are all relatively highly germicidal, non-selective and non-toxic; rapid in action; non-cor-rosive; effective in the presence of organic matter; chemically stable; noninjurious to skin and mucous membrane; relatively odorless and tasteless; bacteriologically stable; non-volatile and wetting agents. It is questionable. however, as to whether they may be considered fungicidal agents. Considerable work on a rapid quantitative analysis testing unit has not yet produced a quick test comparable to that test employed in determining chlorine content of disinfecting solutions.

In addition, their action against

spore formers has not been definitely established and the germicidal activity of these compounds in the presence of organic matter is somewhat affected, as are all germicidal agents. Since laboratory research revealed that these compounds more nearly approached the perfect disinfectant than any discovered heretofore, practical end-research has been under way for several years in virtually every industry having bac-

terial problems.

Before discussing the industrial applications of cationic germicidal detergents, an examination of the position of these compounds in the pharma-ceutical industry will be of interest. The medical profession pioneered the use of alkyl-dimethyl-benzyl-ammonium chloride, as a skin and mucous membrane disinfectant for five years prior to 1941 when this group was accepted by the council on pharmacy and of the American Medical Association. A tremendous quantity of bacteriologic, chemical, physical and

pharmacologic data were accumulated in the early days during the development of these compounds. These data, plus practical experience since 1938. demonstrate the efficacy of quater-nary ammonium compounds as bac-tericidal agents for pre-operative skin preparation, instrument sterilization, bladder lavages, mucosa disinfection, and many other surgical applica-tions. As a result of this effort, one or more of these disinfectants be found in every major pital in the United States and in virtually every medical detail of the Armed Forces. Public health departments, familiar with the highly-refined products available to the medical profession, accelerated commercial est in the development of manufacturing facilities to produce larger quantities of these chemicals in a less highly-refined state for use in the milk plant, the restaurant, the fishery and other allied operations.

A few of these applications will be examined in the following para-

graphs:

ALL of us are familiar with the wide use of coal tar, pine oil and chlorine disinfectants for sanitizing floors, walls, toilet facilities, etc. of public buildings and institutions.

The Armed Forces and certain government institutions were the first to initiate the use of cationic detergents in this category. From reactions re-corded it is quite evident that disinfectant manufacturers must give full consideration in their post-war plan-ning, to the development of a cationic general disinfectant to be added to already existing lines. While the sup-ply of crude quaternary ammonium compounds is limited, due to the fact that the Armed Forces are using considerable quantities of these compounds, several basic organic chemical producers have available concentrates which may be used for starting compounds in manufacturing a product for general use. These starting compounds have phenol coefficients ranging from 150 to 700 or 800 against Staphylococcus aureus and Eberthella tuphosa. products available vary considerably inasmuch as there are many members of this chemical family. Research effort on the part of several companies, is discovering additional members monthly. To manufacture disinfectants from the concentrates which are available, very little equipment will be needed. In many instances it will be far easier and more economic to produce terminal disinfectants from these newer compounds than from the compounds now being used. Within the near future several manufacturers will have considerable data available for study. It would be wise to watch the literature closely in order to keep abreast of impending developments.

The Dairy Industry

THE dairy industry consumes an ex-tremely large quantity of disinfectants in the production, processing, storage and delivery of fluid milk and milk products. This consumption of disinfectants is predicated upon several factors; (1) the competitive situation with regard to quality; (2) the inspectional activity of health departments and (3) the loss-factor resulting from improper handling of dairy items

In view of these factors the dairy industry has consequently taken a decided interest in germicidal cationic detergents, not only on the producing farm but in the processing plant. A considerable amount of research work has been accomplished to date, indicating that several cationic detergents namely, alkyl-dimethyl-benzyl-ammo-nium chloride and dimethyl-octadecenyl-ethyl-ammonium bromide are superior to many commercial preparations which have been in use for the past twenty years. On the farm, these com-pounds find employment as flank and udder disinfectants, as sanitizing agents for milking machines, milk handling utensils and as germicidal agents for floors, troughs, stanchions, etc. In the fluid milk plant it has been repeatedly demonstrated that alkyl-dimethylbenzyl ammonium chloride is an excellent sanitizing agent for weigh tanks, dump tanks, filters, homogenizers, pasteurizers, coolers, fillers and all other equipment commonly associated with the processing of dairy products. While the use of cationic deter-

gents in this field is not excessive today, the acceptance of this group of sanitizing agents by health departments and the industry itself, will create a of organic disinfectants during the next

several years.

Public Eating and Drinking Establishments

CATIONIC detergents have been accepted during the past five years by over 150 health departments in the United States and a limited number of cities in Canada as a sensitizing agent for de-germing public eating and drinking utensils. The acceptance of these products on the part of the restaurant industry has been promising, and experience indicates that this will develop into a substantial business, as educational effort is brought to bear. A host of reports from health departments indicates that these cationic detergents may be used in the final rinse of manual dishwashing operations and suggests that they may play an important role in the newly designed automatic dishwashers which will become available in the post war world.

Several organizations manufac-turing detergents and disinfectants for this trade are studying the suitability of cationic detergents dispersed upon detergent salt bases in an attempt to create a cleansing and disinfecting agent which may be employed in one operation in the restaurant, tavern and soda bar. In view of the fact that policing of eating and drinking estab-lishments by health departments is necessary, in order to maintain high bacteriologic standards of dishes and utensils used by the public when dining out, this field should grow rapidly when the war is over as a large group of people will have been trained by the Armed Forces in sanitary practices and their demands for sanitary restaurant service will be a potent factor of assistance to public health departments.

The Fishing Industry

ALKYL - DIMETHYL - BENZYL -AMMONIUM chloride has been established on the West Coast in several instances as a sanitizing agent for

degerming fishing vessels. Experimental work in this industry indicates that quaternary ammonium compounds have an interesting use potential. For instance, preliminary research work has shown that small quantities of these compounds incorporated in flake ice which is used to refrigerate the fish between the shore fisheries plant and the consumer, renders the fish carcass bacteriostatic and postpones decom-position both in transit and at the retail store. Shrimp have also responded to this treatment in a like manner. No sales effort is indicated in this category until such time as methods have been initiated and the cooperation of the United States Food & Drug Administra-

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tion has been enlisted in studying cationics in this field.

To continue the enumeration of applications where cationic germicidal detergents might find wide use, would take considerable time and be repetitious in character. Suffice it to say at this time, that these compounds are now being commercially used in virtually every major division of the food processing industries, including bakeries, canneries, sugar and starch refineries, yeast plants, breweries, etc. Their applications increase daily, based upon new data being recorded by the chemists and bacteriologists associated with the food processing field.

In addition to being germicidal some of the cationic detergents are algaecidal in high dilutions and are being commercially employed to control the growth of algae in swimming pools, water cooling towers, air conditioning units and heat exchange installations. As well as being algaecidal these com-pounds have also been found to inhibit the growth of slime forming organisms commonly associated with equipment prone to develop algae in the Summer

It is realized that the foregoing is extremely general, but it may be of assistance to disinfectant manufacturers in planning their activities in the post war era.

Evaluation of Disinfectants

By Dr. W. L. Mallman

Michigan State College

A MERICAN manufacturers are today deeply concerned with post-war planning and post-war production. Each wants to enter the post-war era with the most acceptable and dependable products. The manufacturer of disinfectants is no exception.

The writer is fully aware that his readers, who represent the disinfectant manufacturers in this country, are engaged in the manufacture of a are engaged in the manufacture of a very diverse category of chemical compounds, many of which are prepared for a particular type of disinfection. He has no desire to start a polemic by flatly recommending any particular type of chemical agent, even though he could. Development in the field of could. Developments in the field of chemistry are moving too fast for that, and further, there is no one compound and turther, there is no one compound or even type of product that represents the ideal disinfectant for which we have searched so long. The millennium in disinfection has not arrived but in the past decade we have progressed materially toward our goal.

It is extremely hard to evaluate disinfectants on a comparative basis inasmuch as our methods of evaluation are in a bad state of confusion. We have no single reliable method of comparative testing nor have we a group of tests whereby we can intelligently measure disinfectants.

The phenol coefficient procedure The phenol coefficient procedure has been used in comparative evaluations but it yields only questionable regulatory results. The phenol coefficient, when applied to the comparative evaluation of two coal tar products is undoubtedly reliable. Perhaps it can also serve as a means of comparative evaluation between two quaternary ammonium compounds when they are not too widely divergent in their comparative killing dilutions. Definitely, the phenol coefficient procedure cannot the phenol coefficient procedure cannot be used to evaluate comparatively a quaternary ammonium compound, sodium hypochlorite, a chloro-phenol, and a mercurial. There is no method of testing known to the writer whereby this can be done.

The phenol coefficient method, the present F.D.A. procedure, may give

a relative rating of the killing dilution of a disinfectant with a standardized test culture so that compounds can be segregated into groups of low and high killing dilutions. Further than that, it fails utterly to yield information for practical applications.

If we are to discuss disinfectants for the post-war era, we are forced to express our opinions on present meth-ods of evaluation. Because we are so limited, it would appear proper to dis-cuss these methods "pro and con" to see what information we can accept to aid us in our interpretations and evalu-ations in possible predictions of disinfectant trends and acceptances

First let us limit the field of dis-cussion. The writer understands that cussion. The writer understands that his readers are primarily interested in the manufacture and sale of general disinfectants so we will limit our discussions to disinfectants. The term "disinfectants" will be used to indicate compounds used for general disinfection, that is, floor disinfection, barn discussions desired desired desired desired. infection, dairy sanitization and res-taurant sanitation as contrasted with applications to the human or animal body. Compounds used for the latter applications will be designated as antiseptics whether they are applied as germ killers or germ inhibitors. The latter class represents an entirely different from whose in methods of will. ferent group wherein methods of evalu-ation must be quite different. Although some of the compounds sold as disin-fectants may be used as antiseptics, such applications will be ignored in

this discussion, even though some of our evaluations may be acceptable.

What can one accept for means of evaluations from the present F.D.A. phenol coefficent procedure?

Test Organisms

The test organisms, Eberthella typhosa and Staphylococcus aureus are good test organisms as a whole. They represent the two types of disease pro-ducers, the Gram negative and Gram positive groups, respectively. If a compound kills Eberthella typhosa in a certain dilution, there are no true Gram negative organisms that would not be killed with the usually recommended dilution, namely, five times the killing dilution for Eberthella typhosa. In like manner, the same is true of Staphylococcus aureus and the Gram positive organisms with the exception of the spore-forming and acid-fast groups. Care must be exercised in the

use of these organisms, however, because they sometimes change their resistance to certain types of compounds without changing their resistance to phenol. Several years ago in the writer's laboratory, two transplants of Eberthella typhosa originally from the same source, although showing the same resistance to phenol, gave a resistance to Phemerol of 1 to 15,000 for one and 1 to 45,000 for the other. In the latter case, the strain failed to represent the Gram negative group and the acceptance of a dilution of 1 to 45,000 for measurement would have lead to a serious error in the general application of the product. Similar experiences have occurred with Staphylococcus aureus.

From the standpoint of regula-tory evaluation, such changes in bac-terial resistance are serious. These changes account, in part, for the marked discrepancies that occur when several laboratories attempt to check each

Temperature of Medication

The use of 20° C. for testing is satisfactory as this temperature represents, in most instances, the lowest temperature that will prevail in general disinfection and because most compounds increase in germicidal activity with a rise in temperature, the killing dilutions are ascertained at a practical minimal temperature.

Dilutions

Graded serial dilutions to determine the minimum killing dilution for evaluations are extremely unsatisfactory and probably account for most of the erroneous applications of disinfec-tants. First, they do not represent in any sense the use-application dose and, second, most compounds do not give a straight line function when dilution and killing action are graphed. In a comparative study of a few selected compounds we (1) found the following dilution coefficients:

Phenol Cⁿ
Liquor cresolis C^{2,6}
Chloramine T C¹
Mercuric chloride C¹

(Continued on Page 119)

thanite



Good news! A new plant for Thanite will sharply increase production. Bear this in mind when planning your formulas for the 1945 spray season! For Thanite is the only toxic agent for commercial sprays which can claim the following five advantages:



- 1. High kill at low cost.
- 2. Quick and lasting knock-down.
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INSECTICIDE DILUENTS...

Solubility of arsenicals and copper fungicides as affected by diluents in agricultural dusts

By M. W. Goodwin¹, S. L. Hopperstead², and K. J. Kadow³

Delaware Agricultural Experiment Station *



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V the past, fungicidal and insecticidal dusts were made with little or no regard for the chemical and physical properties of the diluent. Not until recently

have pathologists and entomologists come to the realization that the socalled "inert ingredients" are nearly as important to the proper compounding and performance of such dusts as are the "active ingredients." In the last few years several workers have considered particular problems dealing with specific uses of diluents, but because of lack of faith in the methods used, few workers have published their findings.

The recognized importance of injury to plant tissues, particularly vegetables, from the use of Bordeaux (8, 12) and lime (7) has accentuated the search for suitable substitutes for them. Several manufacturers have perfected copper compounds which appear to be satisfactory substitutes for Bordeaux in many of its recommended capacities. On vegetables these copper compounds are recommended for use without lime. This fact has stimulated the production of diluents to replace the lime in dusting formulas, and at present a wide variety of materials are available. Detailed consideration of their physical and chemical properties is essential.

Entomologists (1) have rather gradually come to realize that the insecticidal value of rotenone is greatly

reduced by the use of alkaline diluents and, consequently, now recommend neutral or acid materials. It has been demonstrated by Wilson and Runnels (12) that some of the so-called "inerts" are harmful to tomato transplants. In papers by Horsfall, et al. (7, 8) evidence is presented which indicates that both acid and alkaline diluents accelerate transpiration. Nikitin (10) studies the effect of wheat and soya flour on the solubility and toxicity of copper fungicides. He reported that "wheat flour activates copper fungicides less than soya flour," but indicated that both materials react in some manner with the fungicides used. In a later abstract Nikitin (11) reported on the base exchange and copper adsorption capacities of different diluents. He suggested that a knowledge of such variations may be useful in compounding dusts for specific purposes. Heuberger (6) has demonstrated that the thoroughness of admixture of fungicides and diluents affects materially the fungicidal performance of copper oxychloride and cuprous oxide. Undoubtedly the findings will apply equally well to other copper compounds. Wilson et al., (13, 14) have reported on the density and flowability of several diluents and dust mixtures. These and other physical properties of diluents and dust mixtures are now being given much consideration.

In abstracts preliminary to this paper Goodwin et al., (4, 5) gave limited data on the chemical compatibility of 81 diluents with other dust ingredients in respect to production of water-soluble arsenic and copper. It was the purpose of this study to ascertain the effect of the many diluents on

the different types of copper with and without calcium arsenate.

Experimental Procedure

This study was begun with 81 different diluents but 33 of them were dropped because of conspicuous physical short-comings or unavailability. Accordingly, samples of dusts, both with and without calcium arsenate, were prepared using the remaining 48 diluent materials. The fungicides used in these mixtures were red cuprous oxide, tribasic copper sulfate, and copper oxychloride. The dusts were all prepared to contain 6% Cu and, when present, 10% calcium arsenate; the balance being made up with the diluent.

All pH measurements were made with a glass electrode upon a moistened sample of the dust mixtures.

Water-soluble copper and arsenic were liberated from the samples by shaking 10 grams of the mixture with 800 mls. of water for half an hour at room temperature. This was then filtered clear. Several thicknesses of filter paper and, in many cases, several filterings were necessary to obtain a clear filtrate. Aliquots were analyzed for copper and arsenic, the former colorimetrically by the sodium diethyl dithiocarbamate method (3), and the latter by the iodine titration method of the Association of Official Agricultural Chemists (2).

pH Affects Solubility

It was evident from the data obtained that the pH values of the separate ingredients used in dust mixtures do not always afford reliable indices for predicting the pH of their mixtures. Apparently many diluents buffer or react with the other ingredi-

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The writers wish to express their appreciation to the Rohm and Haas Company for technical aid and advice given and for aid in making the dust mixtures.

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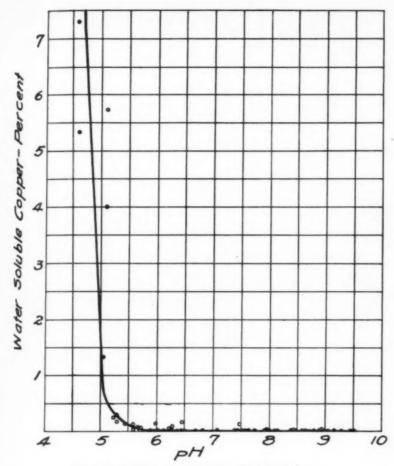


Figure 1. Relation of pH to Water Soluble Copper.

ents of the mixtures. A detailed study of each diluent material is necessary before its behavior in a dust mixture can be ascertained.

It will be noted from Figure 1 that a good correlation appears to exist between the pH of a mixture and the amount of water-soluble copper found. Above pH 5.5, very little water-soluble copper was in evidence, while below this point, amounts were liberated that could be injurious to plants. When calcium arsenate was included in the dust mixture the reaction was always well above the danger point of pH 5.5, due probably to the free lime in the arsenate, and in no case tested was soluble copper found.

No such clear-cut results were obtained from the water-soluble arsenic determinations. Different commercial calcium arsenates vary in composition and, consequently, liberate different amounts of water-soluble ar-

senic. It is evident from the data accumulated in this study that the calcium arsenate exerted a greater effect upon the reaction of a mixture, hence its apparent safety, than either the "inert" or copper used. When dealing with the same arsenate, the lower the pH the higher the amounts of water-soluble As₂O₅ as pictured in Figure 2. This graph represents an average of the various determinations. Mixtures with a reaction above pH 11.0 show very little present.

In an attempt to ascertain the comparative safety of the three coppers used, results were grouped as in Table 1.

The first half of the table deals with dust mixtures without calcium arsenate. It can be noted from the number of mixtures in the various ranges that cuprous oxide (pH 6.45) and tribasic copper sulfate (pH 6.40) exerted very little buffering effect on the pH of the dust. Copper oxychloride (pH 8.10), however, did resist change in pH and, in view of this buffering effect, all copper oxychloride mixtures, due to their reaction above pH 5.5, showed practically no water-soluble copper.

Similar results were obtained when calcium arsenate was present, as shown in the second half of the table. Cuprous oxide and tribasic copper sulfate again exerted very little ability to resist change in pH. The free lime in the calcium arsenate appears to be the governing factor in the final pH of the mixtures with these two copper compounds. Copper oxychloride consistently showed a greater buffering effect and in the majority of its mix-

Table I—Summary of the number of mixtures in the different pH ranges, showing the relationship of the copper fungicides and calcium arsenate to the completed mixtures.

	Without	Calcium	Arsenate	With Calcius	m Arsenat	e pH 12.3
Dust Mixture	Cuprous Oxide pH 6.45	Tribasic Copper Sulfate pH 6.40	Copper Oxy- chloride pH 8.10	Cuprous Oxide	Tribasic Copper Sulfate	Copper Oxy- chloride
11.5-12.0			* *	8	6	0
11.0-11.5			1.4	13	19	0
10.5-11.0				16	8	7
10.0-10.5				3	4	5
9.5-10.0		* *		[ſ	13
9.0- 9.5	8	1	0	{6	{9	8
8.5- 9.0	12	7	6			11
8.0- 8.5	5	10	32			
7.5- 8.0	8	7	6	0	0	2
7.0- 7.5	2	3	0			
6.5- 7.0	3	0	2			
6.0- 6.5	5	6	0			
5.5- 6.0	0	6	0			
5.0- 5.5	3	4	0			
4.5- 5.0	0	2	0			

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tures, the final pH was below 10.0; thus, varying amounts of arsenic were liberated.

Summary

Dust mixtures were prepared with and without calcium arsenate using many different diluent materials, each with red cuprous oxide, tribasic copper sulfate and copper oxychloride. Mixtures were analyzed for water-soluble copper and arsenic and pH determinations made of all materials and mixtures. In many cases, the pH values of the separate ingredients used in dust mixtures gave no indication of the pH of their subsequent mixture.

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A good correlation existed between pH and water-soluble copper with no excessive amounts liberated above pH 5.5.

The presence of calcium arsenate in the mixture complicated the results, but, as a general rule, the lower the pH, the higher the water-soluble arsenic. Mixtures with a reaction above pH 11.0 liberated very little soluble arsenic. Below this point, varying amounts of soluble arsenic were liberated.

Copper oxychloride exerted a stronger buffering action than either cuprous oxide or tribasic copper sulfate, and consequently may be safer from the standpoint of water-soluble copper in dust mixtures that do not contain calcium arsenate. However, this was not true when calcium arsenate was a part of the mixture because the buffering capacity of the copper oxychloride tended to lower the pH below 11.0 with a consequent liberation of water-soluble arsenic. Since cuprous oxide and tribasic copper sulfate lacked this buffering capacity, mixtures containing these materials tended to have a pH above the danger point and were probably safer in respect to the liberation of water-soluble

From this data it seems advisable that a dust mixture containing copper fungicides and no calcium arsenate have a reaction above pH 5.5. When calcium arsenate is present the mixture should then have a reaction above pH 11.0.

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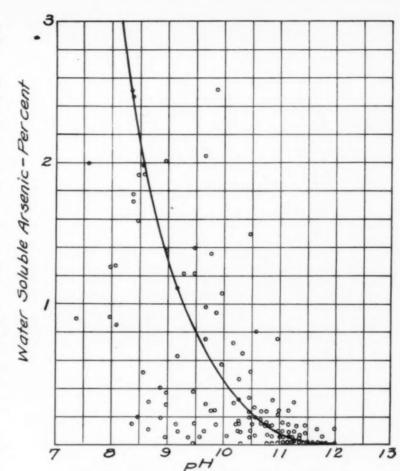


Figure 2. Relation of pH to Water Soluble Arsenic.

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The Market Outlook in ROSIN

HAT old aphorism about there "two sides to every story" is eloquently demonstrated by trade opinions on the current rosin supply outlook. The divergent views hold: (1) there will be a big shortage of rosin for the crop year ending March 31, 1945, and (2) there will be enough rosin to go around for the next year. WPB officials and some trade sources adhere to belief 1. while others in the industry take a more optimistic view of the situation. To support their position WPB officials quote figures to show that a deficit of 600,000 (500 pound) barrels of rosin is in the offing for the current season. This deficit is arrived at by subtracting an anticipated consumption (domestic and foreign) of 2,207,000 barrels from an expected production of 1,650,000 barrels of rosin. These figures were reported to have been used by spokesmen of the Chemicals Bureau of the War Production Board at a meeting, held late in June, with the Wood and Gum Naval Stores Industry Advisory Committee in Washington, D. C.

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Countering, trade sources holding that there will be enough rosin to go round, say that WPB is all right as far as it goes, but that it does not go far enough. This group believes that the WPB makes the picture look very black by not taking into consideration stocks of rosin held by various groups of manufacturers, which are thought to be very large. This is believed to be true in the case of soap manufacturers, who, as is their custom, buy raw materials in large quantities, and who, it is said, have not bought very much rosin lately, indicating perhaps that they already hold large rosin stockpiles. Added weight is lent to this argument by the fact that almost 50 per cent more rosin was used in soap in the past crop year than in the previous crop year, even though the compulsion to use rosin in soap was in

effect for only about five of the twelve months of the crop year. Thus, with more and more rosin being used in soap, it seems unlikely that soapers could keep out of the market for very long when rosin was growing scarce unless they held sizable stocks. It is also true that soapers don't normally buy their raw materials when prices are high, although it would seem to be unavoidable if they didn't have large stocks and they needed the particular raw material.

The people in the Chemicals Bureau of the WPB, are not, of course, totally unaware of the stockpile situation in rosin consuming industries. In one story telling of the WPB-Industry Advisory Committee meeting, it was reported that Chemicals Bureau officials had warned that if production is not increased it may shortly be necessary to curtail consumption and to "reduce correspondingly abnormally large inventories wherever held." This same report points out that "new (probably wartime) uses developed for rosin have accounted for increased requirements ... (and that) ... one notable substitute use of rosin is for the replacement of alkyd resins, which are even more critical in supply than rosin."

On the other hand, it is pointed out by those who are not "rosin-incritically -short - supply" minded that available rosin supplies should be increased by the fact that we are reported no longer shipping rosin to England. How much of this material we have been shipping, is, of course, very much a matter of military secrecy. England, it is believed, will now get her rosin from Portugal.

Thus far, the rosin supply situation seems largely characterized by cleavages in points of view as to whether or not there is or will be in the near future a shortage. There is harmony, however, among the various groups interested in rosin, as to the

urgent need for additional replacements in the manpower department of the rosin industry. Manpower, it appears, is the key to the whole rosin situation. It is short in this industry, where wage standards are below those current in most war plants. As a result, able bodied men who have thus far escaped the provisions of the Selective Service Act have in too many instances answered the siren-call of higher wages in nearby war production plants. Thus, while a blanket deferment is operative in the rosin producing industry, like so many other of the wartime measures its effect has been dulled by its tardiness. In attempting to remedy this critical labor problem in an industry that contributes much to the war production program, the War Production Board is said to have enlisted the support of the War Manpower Commission. In fact, that was one of the purposes of the recent meeting in Washington of industry and government agency representatives. It is a further aim of the WPB to help get much needed field and plant equipment for the industry, reports of the meeting stated.

The outcome of the conference was to be a thirty-day period of study of the industry and its problems by the Chemicals Bureau of WPB to determine whether any further action is necessary. Meanwhile, less than a week after the Washington conference all sales of gum rosin were brought under dollars-and-cents per hundred pounds price ceilings with the issuance of a temporary 60-day regulation, designed, it was said, to halt rapidly rising prices of the commodity, the Office of Price Administration announced. The temporary prices will be replaced by a permanent regulation to be issued at a later date, the OPA said. This may not be necessary, though, because as a result of freezing prices at such high levels, prices began to tumble almost

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as soon as news of the order was published. One story said that "a drastic readjustment in rosin prices (was made) . . . in order to induce buyers to enter the market." The decline was general; recorded in all grades. Price declines ranged from 10c to 30c. Rosin prices had been advancing at a fairly steady gait up until the time the OPA clapped a ceiling on them. However, when word was published about a rosin shortage a certain amount of scare buying or bidding did have the effect of driving prices up.

The temporary order, which went into effect June 28, 1944, set the following ceiling prices per hundred pounds for 13 grades of gum rosin quoted on the Savannah, Ga., Cotton and Naval Stores Exchange: grades X and WW, \$6.50; grade WG, \$6.31; N, \$6.20; M, \$6.10; K, \$6.05; I, \$5.90; H, \$5.80; G, \$5.75; F, \$5.70; E, \$5.65; D, \$5.20 and B, \$5.10. For sales not made on the Savannah Exchange, the Exchange prices are used as a base, with adjustments according to the seller's differentials from those prices during the period June 23, 1944 to June 27, 1944, inclusive, the five days prior to issuance of the regulation. Gum rosin has been exempt from price control since June 19, 1942. The maximum prices established by the OPA action fulfill the requirements of the Emergency Price Control Act that prices set for agricultural commodities must reflect certain legal minimums, the OPA announcement states. The reason given by the OPA for the action is the usual one that "prices rose to a point reflecting higher production costs for finished articles in which rosin is used as a raw material. This resulted in a squeeze on the established ceiling prices of the finished product," the OPA reasoned.

At about the time of the issuance of the price control regulation on rosin, or shortly before, it was announced by the War Food Administration that WFO-86, formerly FDO-86, and referred to as the "fat-stretching order" at the time of its issuance, Oct. 20, 1943, had been amended. Now, clearly indicative of the state of mind in Washington agency circles about the supply position of rosin, WFO-86 was changed to allow for removal of

the provision requiring use of additional rosin in soap. At the time FDO-86 was originally issued, it was intended to help soapers to stretch supplies approximately nine per cent without the use of additional fats or oils. This was to be accomplished by the enforced use of additional quantities of rosin or rosin and builders in numerous soap products for domestic use, over and above the amounts which were used during an established base period-the thirty day period ending July 17, 1942. The percentage of substitution was from two to fifteen per cent, depending on the kind of soap. The order was effective Nov. 1, 1943.

IGURES on rosin consumption for The twelve months period April 1, 1943 to March 31, 1944 show that 408,823 (500 pound) barrels were used in the manufacture of soap, as compared with 238,658 (500 pound) barrels for the twelve months April 1, 1942 to March 31, 1943. Use of rosin in the manufacture of insecticides and disinfectants, shoe polish and shoe materials and rubber (synthetic and reprocessed) also rose for the twelve months ending March 31, of this year, as compared with the comparable period ending on March 31, 1943, according to the 1943-44 annual naval stores report of the U.S. Department of Agriculture. As far as the total supply picture is concerned, the report shows that in another large rosin consumer category; paper and paper size, there was a fairly substantial increase in use during 1943-44 over the 1942-43 period. In 1943-44, 477,959 (500 pound) barrels of rosin were used, as against 367,021 (500 pound) barrels in the comparable period of the years 1942-43. In the other three largest categories: chemicals and pharmaceuticals; paint, varnish and lacquer and ester gum and synthetic resins, declines of 31,260, 6,194 and 2,056 (500 pound) barrels, respectively, were recorded for the year just ended, as compared with the previous twelve month period. The overall reported industrial consumption for 1943-44 was 1,640,-824 (500 pound) barrels as compared to 1,411,082 (500 pound) barrels for the comparable period in 1942-43. Apparent total consumption was 2,440,-

342 (500 pound) barrels for the 1943-44 naval stores season, compared to 1,899,145 (500 pound) barrels in the 1942-43 season.

In addition to an increase in rosin consumption and a decline in production during the past naval stores season, stocks (carryover) declined during the year. On April 1, 1943 rosin stocks were reported to be 1,605,-286 (500 pound) barrels. On March 31, 1944 stocks had dropped to 993,-483 (500 pound) barrels, the latest naval stores report shows. Thus, in a year, stocks of rosin declined 611,803 (500 pound) barrels. A year earlier they had dropped 514,538 (500 pound) barrels; while two years ago the stock drop was 97,265 (500 pound) barrels. In the three years immediately preceding 1942 stock increases were recorded, the report in-

It is of course these alarming symptoms: increased consumption, lowered production and stocks, that are causing so much anxiety in Washington, and particularly in the Chemicals Bureau of WPB. Something for the OPA to worry about, or rather to quit worrying about now that a price ceiling has been established, is the fact that the average monthly and season prices of gum rosin (280 pound) barrels averaged \$9.66 during the April 1, 1943-March 31, 1944 season. The average for the period ending March 31, in the previous year was \$7.59. This average compares with \$4.55 in 1940-41, the eight year low, and \$6.19 in 1941-42.

Although it has been freely talked about and predicted in the past, it seems fairly certain that allocation of rosin in the near future will be accomplished; perhaps even before this issue appears. Rosin allocation,—if and when it comes—will in all probability be operated on a percentage of base period use, with none to be allocated for holders of excessive inventories until those inventories are reduced.

Rosin, if it remains freely available, will probably continue to be used in fairly good quantity in soap despite the fact that there is no longer compulsion on such use. This belief, expressed by one trade source, is based on

(Continued on Page 131)

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Principles of Disinfection
Coal Tar Disinfectants
Cresol Compounds
Pine Oil Disinfectants
Hypochlorites
Formaldehyde
Oil Soaps
Liquid Soaps
Soap Dispensers
Floor Waxes
The Insect Problem

Pyrethrum Insecticides
Rotenone Materials
Synthetic Insecticides
Activators
Roach Control
Bedbug Liquids
Livestock Sprays
Sprayers
Moth Preparations
Deodorant and Urinal
Blocks
Labeling and Packaging
Appendix

Published by

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254 West 31st Street

NEW YORK 1, N. Y.

Chicken Louse Control

By Dr. H. S. Telford

Dr. Hess & Clark, Inc.

HICKEN lice may now be added to the ever-increasing list of noxious insects, which may be controlled by DDT. Preliminary trials indicate this chemical to be as effective as sodium fluoride against the chicken body louse, Eomenacanthus stramineus (Nitzsch), and the shaft louse or little body louse, Menopon gallinae (Linné).

A total of 24 two-year-old, louse-infested, White Leghorn hens segregated into 4 isolated pens of 6 birds each were used in the experiment. Pyrophyllite was employed as the carrier for all the lousicides. One group was dusted with 4% DDT, another with 0.5% nicotine (Black leaf 155), the third with 33% sodium fluoride, and the fourth or control group was given a liberal dusting with pyrophyllite. All dusts were applied with a salt shaker type applicator.

Considerable difficulty was ex-

perienced in obtaining an accurate louse census before treatment. The writer was obliged to place arbitrary ratings on the louse populations as gross, moderate or light, depending upon the severity of the infestation. A hen with the rating of light harbored at least 100 each of the two species of lice involved, while moderate and gross ratings were placed on infestations proportionally greater. When noticeable reductions occurred after treatment, the louse count was obtained by counting the lice observed after five minutes search. These figures are listed in the following table under the subhead "Louse Infestation." For obvious reasons the figures are valuable for comparison only, since they do not necessarily represent the actual louse populations remaining.

A summary of the essential data is contained in the accompanying table:

The lice responded quite differently to the three lousicides. Both species were definitely irritated by DDT as evidenced by their running about on the outer surface of the feathers two to three minutes after application. These later became paralyzed and failed to recover. In the case of nicotine, paralysis apparently set in more quickly but poorer kills of the shaft louse were obtained. Sodium fluoride, while the slowest acting insecticide, was highly efficient, killing both species from 28 to 52 hours after application. In contrast to nicotine, DDT and sodium fluoride were slower but surer acting, while lice treated with nicotine were either killed within a short time or escaped death.

A similar trial using 12 grams of 0.5% DDT in pyrophyllite on each of four infested birds was equally as satisfactory as results obtained from (Turn to Page 139)

EFFICACY OF DDT, NICOTINE AND SODIUM FLUORIDE FOR CHICKEN LICE CONTROL

			festation eatment*	41	nfestation tours reatment	28 /	nfestation hours reatment	Louse inf 52 ho after tre	urs atment	
Treatment	Bird No.	Body Louse	Shaft Louse		Shaft e Louse	Body Louse	Shaft Louse	Body Louse	Shaft Louse	
4% DDT in Pyrophyllite. Total	1	Gross	Gross	0	5	0	0	0	0	
amount used: 38 grams. Ave. for	2	Light	Light	0	7	0	0	0	0	
each bird: 6.3 grams.	3	Light	Moderate	2	4	0	0	0	0	
	4	Light	Light	0	8	0	0	0	0	
	5	Light	Light	0	5	0	0	0	0	
	6	Moderate	Moderate	1	10	0	0	0	0	
0.5% Nicotine in Pyrophyllite.	1	Moderate	Light	0	32	0	38	0	66	
Total amount used: 38 grams. Ave.	2	Gross	Gross	0	46	0	52	0	49	
for each bird: 6,3 grams.	3	Gross	Gross	0	20	0	27	0	18	
	4	Gross	Gross	0	34	0	27	0	50	
	5	Moderate	Moderate	0	15	0	25	0	63	
	6	Light	Light	0	52	0	32	0	42	
33% Sodium Fluoride in Pyrophil-	1	Gross	Gross	No ap	parent	0	1	0	0	
lite. Total amount used: 47 grams.	2	Gross	Gross		ction	0	2	0	0	
Ave. for each bird: 7.8 grams.	3	Light	Moderate	althoug	h a few	0	0	0	0	
	4	Gross	Gross	lice o		0	4	0	0	
	5	Gross	Gross	spe		0	6	0	0	
	6	Moderate	Moderate	observe		0	8	0	0	
Check Pyrophyllite. Total amount	1	Gross	Gross	N	Io	N	0	No		
used: 60 grams. Ave. for each bird:	2	Gross	Gross	-	arent	appa	-	appar		
10 grams.	3	Moderate	Moderate		ction	reduc		reduc		
	4	Light	Moderate							
	5	Gross	Gross							
	6	Light	Gross							

^{*} No birds were chosen which did not harbor at least 100 lice of each species. The figures represent the number of lice counted after five minutes search.

1, 1944

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OPA Order (R.M.P.R. 298) Permits Advances in Prices of Rotenone and Pyrethrum

June 30, 1944

PART 1372-SEASONAL COMMODITIES (RMPR 298)

ROTENONE AND PYRETHRUM Maximum Price Regulation 298 is redesignated Revised Maximum Price Regulation 298 and is revised and amended to read as set forth herein. Revised MPR 298 now establishes maximum prices for rotenone at levels other than retail which were covered by MPR 298 and also for pyrethrum at levels other than at retail. Prices for pyrethrum at these levels were formerly governed by the General Maximum Price Regulation.

In the judgment of the Price Administrator, the maximum prices established by this revised regulation are and will be generally fair and equitable and will effectuate the purposes of the Emergency Price Control Act of 1942, as amended, and Executive Orders 9250 and 9328. So far as practical, the Price Administrator has advised and consulted with the members of the indus-

try affected by this revised regulation. Such standards and specifications as are used in this revised regulation were, prior to such use, in general use in the industry affected.

A statement of the considerations involved in the issuance of this revised regulation has been issued simultaneously herewith and filed with the Division of the Federal Register.

REVISED MAXIMUM PRICE REGULATION 298 ROTENONE AND PYRETHRUM CONTENTS

Applicability.

- Sales at other than maximum prices. Evasion.
- Records and reports.
- Enforcement.
- Licensing.
- Protests and petitions for amend-
- 8. Definitions. Appendix A-Maximum prices for rotenone and rotenone products.

 Appendix B—Maximum prices for

pyrethrum and pyrethrum prod-

AUTHORITY: Secs. 1 to 8, inclusive

AUTHORITY: Secs. 1 to 8, inclusive (\$ 1372.151), issued under 56 Stat. 23, 765; Pub. Law 151, 78th Cong.; E.O. 9250, 7 F.R. 7871; E.O. 9328, 8 F.R. 4681.

Section 1. Applicability. (a) Except as provided in paragraph (b) of this section with reference to emergency sales to the United States and its gency sales to the United States and its agencies and paragraph (c) of this section with reference to export sales, this regulation shall apply to all sales other than at retail of rotenone and pyrethrum and of rotenone and pyrethrum products, whether sold for immediate

or future delivery, within the District *Copies may be obtained from the Office of Price Administration. of Columbia and the 48 states of the United States.

(b) Emergency purchases. This regulation shall have no application to any purchases by the United States or any of its agencies under such circumstances of emergency as to make immediate delivery imperative and as render it impossible to secure or unfair to require immediate delivery at the maximum price which would otherwise be applicable if such purchases and deliveries are made pursuant to the prosection 4.3 (f) of Revised Supplementary Regulation 1 to the General Maximum Price Regulation, as amended: Provided, however, That the Administrator may, by order, waive the reporting of any part of the information required by section 4.3 (f) in connection with a particular purchase or group of purchases upon determining that such information may not reasonably be required under all the cir-cumstances, and he may, in lieu thereof, require the reporting of other information more suited to the circumstances.

(c) This regulation shall have no application to export sales of rotenone and pyrethrum and rotenone and pyrethrum products. The maximum price of such sales shall be determined in ac-cordance with the provisions of the Second Revised Export Price Regula-

SEC. 2. Sales at other than maximum prices. (a) Regardless of any contract or obligation, no person shall sell or deliver other than at retail, and no person in the course of trade or business shall buy or receive other than at retail rotenone and pyrethrum and rotenone and pyrethrum products at a price above the maximum price estab-lished by Appendices A and B of this regulation for such sale, nor shall any person agree to solicit, offer or attempt to do any of the foregoing. This prohibition, however, is subject to the provision for adjustable pricing contained in paragraph (b) of this section, the exception for emergency purchases by the United States and its agencies contained in paragraph (b) of section 1 and the exception for export sales con-

tained in paragraph (c) of section 1,
(b) Any person may agree to sell at a price which can be increased up to the maximum price in effect at the time of delivery, but no person may, unless authorized by the Office of Price Administration, deliver or agree to deliver at prices to be adjusted upward in accordance with action taken by the Office of Price Administration after de-livery. Such authorization may be given when a request for a change in the applicable maximum price is pend-ing, but only if the authorization is necessary to promote distribution or production and if it will not interfere with the purpose of the Emergency

Price Control Act of 1942, as amended. The authorization may be given by an order of the Administrator or any official of the Office of Price Administration having authority to act upon the pending request for a change in price or to give the authorization.

(c) Prices lower than the maximum prices established by this regula-

tion may, of course, be charged or paid.

SEC. 3. Evasion. Any method whereby a seller obtains greater consideration than the maximum price, or whereby he gives less than the consideration due the buyer for the maximum price is an evasion of this regulation, and therefore prohibited; and any offer or agreement which accomplishes or attempts to accomplish such a result is equally prohibited; except, that the foregoing does not prohibit practices which were customary either to the seller or to the trade prior to April 1, 1942 of requiring the buyer to purchase combinations of commodities or of requiring the buyer to sell back to the seller other commodities or the same commodity: Provided, All such sales and purchases are at the market price, not exceeding the maximum price.

Sec. 4. Records and reports. (a) person selling within the continental United States rotenone and pyrethrum and rotenone pyrethrum products other than at retail, shall preserve and keep for inspection by the Office of Price Administration, for as long a period as the Emergency Price Control Act of 1942, as amended, remains in effect, all available records. customarily kept, of prices, costs, pricing methods, delivery charges, allowances and discounts, on all sales of such products made by such seller since January,

(b) Persons affected by this regu-lation shall submit such reports to the Office of Price Administration as it may from time to time require, subject to the approval of the Bureau of the Budget, in accordance with Federal Reports Act of 1942.

Sec. 5. Enforcement. Persons vio-lating any provisions of this regulation are subject to the license revocation or suspension provisions, civil enforce-ment actions, suits for treble damages and criminal penalties, provided in Emergency Price Control Act of 1942, as amended.

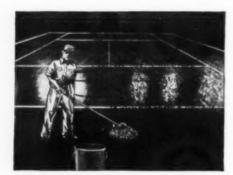
SEC. 6. Licensing. The provisions of Licensing Order No. 1, licensing all persons who make sales under price are applicable to all subject to this regulation. A seller's li-cense may be suspended for violations of the license or of any one or more applicable price schedules or regula-tions. A person whose license is suspended may not, during the period of suspension, make any sale for which his license has been suspended.

SEC. 7. Protests and petitions for amendment. Any person desiring to file a protest against or seeking an amendment of any provision of this regulation may file a protest or petition for amend-ment in accordance with the provisions revised Procedural Regulation No. 11 issued by the Office of Price Administration.

SEC. 8. Definitions. (a) When used in this Revised Maximum Price Regulation No. 298, the term:

¹ 7 F.R. 8961, 8 F.R. 3313, 3533, 6173, 11806, 9 F.R. 1594, 3075.

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(1) "Rotenone" means the chemical compound having the formula C. H.,O.

(2) "Crude rotenone" means the rotenone which would be indicated as present in the rotenone bearing material by the Seil analytical method, in which the rotenone content is calculated from the weight of crude solvate.

(3) "Pure rotenone" means rotenone which would be indicated as present in the rotenone-bearing material by the analytical method developed by Jones and Graham and adopted as "official, first action" by the Association of Official Agricultural Chemists.

(4) "Chemically pure rotenone" means crystals of pure rotenone C

(5) "Rotenone powder" means ground rotenone root, sufficiently fine so that 90 per cent of the ground material will pass through a 200-mesh sieve.
"Powder" includes a blend of two or more lots of ground root but does not include material containing any sub-stance other than ground rotenonebearing root.

(6) "Rotenone resin" means the dry, undiluted product, consisting of rotenone and rotenoids, which is extracted from rotenone bearing material with the usual commercial solvent.

(7) "Rotenone liquid extracts' means rotenone resins in solution.

(8) "Technically pure rotenone" means crystals containing at least 90 per cent pure rotenone.

(9) "Rotenone solvate," as used in this regulation, means a compound of rotenone and carbon tetrachloride containing at least 71 per cent pure

(10) "Rotenone roots" means roots dug from the ground such as timbo, barbasco, cube or derris root whether whole, chopped or ground, except rotenone powder as defined in paragraph (5) of this section.

(11) "Pyrethrins" means the active principles of pyrethrum flowers including Pyrethrin I (C21H36O3) and (C2H3O3), indicated as Pyrethrin II present in the pyrethrum product by the Seil analytical method.

(12) "Pyrethrum flowers" means the dried flowers of various species of genus Chrysanthemum, Compositae, having commercial value for use as insecticides.

(13) "Finely ground pyrethrum powder" means the ground pyrethrum flowers of a fineness suitable for use in finished insecticides.

(14) "Flowers ground for percolation" means the coarsely ground pyrethrum flowers as prepared for pur-

poses of extracting the pyrethrins.
(15) "Exhausted flowers" means the part of the pyrethrum flower remaining after extraction of most of the

pyrethrins.

"Pyrethrum dust means a dry powder prepared by coating or impregnating clay, talc or any other more or less inert material with pyrethrins.

(17) "Oleoresins or unpurified pyrethrum concentrates" means the extractives of pyrethrum flowers, including pyrethrins and varying amounts of

(18) "De-waxed or purified pyrethrum concentrates" means the extracted pyrethrins isolated from impurities to the extent necessary to comply with the specifications for use in insecticides by the Armed Services.

(19) "Pyrethrum liquid extracts" means solutions of pyrethrum extrac-tives standardized according to pyrethrins content.

(20) "Unfinished products" means preparations of rotenone or pyrethrum. as the context may imply, which are not commonly used as finished insecticides but which may be materials in the manufacture of finished insecti-

(21) "Finished insecticides means products containing rotenone or pyrethrrum, as the context may imply, and used for control of insects when sold in a form commonly purchased by consumers.

(22) "Unit" means 1 per cent by weight.

(23) "Processor" means any perwho purchases rotenone bearing roots, rotenone powder and pyrethrum flowers from the Foreign Economic Administration. A processor may also be a manufacturer.

(24) "Manufacturer" means any person who grinds, extracts, mixes, reconditions or otherwise processes rotenone bearing roots or pyrethrum flowers or products thereof to produce other unfinished products or finished

insecticides.
(25) "Distributor," as used in this regulation, means any person who purchases rotenone or pyrethrum products from a processor for resale to a manu-

(26) "Wholesaler," for the purposes of this regulation, means a person other than a manufacturer who sells the commodity being priced to a dealer.

(27) "Dealer," for the purposes of this regulation, is a person other than a manufacturer or wholesaler who sells

at retail the commodity being priced.

(28) "Sale at retail" means a sale to an ultimate consumer. APPENDIX A-MAXIMUM PRICES FOR

ROTENONE AND ROTENONE PRODUCTS The maximum prices below are in general for the material in large containers. Where no specific provision is made for pricing sales in small containers, the seller may add, on such sales, his customary "small package" differentials.

(a) (1) Rotenone roots for sale to processors. Five cents per unit of crude rotenone per pound of root, seller to pay all costs of freight, insurance, entry, analysis, weighing and the like, ex-dock at port of entry.

(2) Rotenone powder for sale to processors. Seven cents per unit of pure rotenone per pound of powder, seller to pay all costs of freight, insurance, entry, analysis, weighing and the like, ex-dock at port of entry.

(b) Unfinished rotenone products for sale by processors and distributors (1) Rotenone powder. Eight cents per unit of pure rotenone per pound of powder, f.o.b. cars at New York, New York, except there may be added, for sales in quantities of less than 200 pounds, 10 per cent.

(2) Rotenone resin. Twelve cents per unit of pure rotenone per pound of resin, f.o.b. processor's plant.

(3) Rotenone liquid extract, \$1.05 per unit of pure rotenone per gallon of extract plus the cost of one gallon of the solvent used for the extract, f.o.b. processor's plant.

(4) Chemically pure rotenone. \$13.50 per pound f.o.b. processor's plant.

(5) Technically pure rotenone. \$10.90 per pound, f.o.b. processor's plant.

(6) Rotenone solvate. \$8.65 per

pound, f.o.b. processor's plant.
(7) Other unfinished rotenone products. The maximum price shall be determined by the seller after specific authorization from the Office of Administration. A seller who seeks an authorization to determine a maximum price under the provision of this paragraph shall file with the Agricultural Chemicals Section of the Office of Price Administration in Washington, D. C., an application setting forth:

(i) A description of the commodity for which a maximum price is

(ii) A list of materials used in the manufacture of the commodity, (iii) An outline of the manufac-

turing process, (iv) The seller's cost of raw ma terials, packages, manuacturing and other expenses

(v) Changes in the selling price

since January 1, 1941, and
(vi) The seller's maximum price the General Maximum Regulation. When such authorization is given, it will be accompanied by instructions as to the method for determining the maximum price. Within ten days after such price has been determined, the seller shall report the price to the Agricultural Chemicals Section of the Office of Price Administration in Washington, D. C. The price so reported shall be subject to adjustment at any time by the Office of Price Administration.

(c) Finished rotenone insecticides for sale by manufacturers.—(1) Finished rotenone insecticides for which a maximum price had been established prior to June 1, 1944. The maximum price which the manufacturer might have charged for the insecticide on May 31, 1944 plus 1.5 cents per unit of pure rotenone per pound of the insecticide, except that in no event may prices for the following finished insecticides exceed the prices listed there-

Dry finished insecticides which rotenone powder is the base, in containers of ten pounds or more ca-pacity, for sale to dealers, subject to customary wholesalers' discounts, f.o.b. manufacturer's plant. 14 cents per pound of finished insecticide guaranteed to contain 1 per cent pure rotenone, plus or minus, as the case may be, 1 cent per pound of finished insecticide for each variation in pure rotenone content of one-tenth of 1 per cent (0.1%). For example, the maximum prices for dusts containing .5% and .75% pure rotenone shall be 9 cents and 11.5 cents per pound, respectively. In the insecticide contains active insecticidal ingredients in addition to rotenone, the above prices may be increased by the amount of the delivered cost to the manufacturer for such additional active ingredients guaranteed in the finished insecticide. If the manufacturer of the finished rotenone insec-ticide is also the manufacturer of the additional active ingredient he may use his maximum price for a sale to an-

. Y.

, 1944

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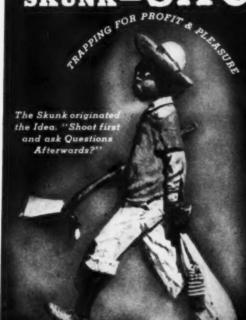
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other insecticide manufacturer as his own delivered cost of such additional

active ingredient.

(2) Finished rotenone insecti-cides for which no maximum price had been established prior to June 1, 1944.
(i) The price for the most closely similar insecticide for which a maximum is established in subparagraph (1) above plus or minus, as the case may be, the difference between the total cost of all raw materials and packages used in the manufacture of the similar insecticide and the total cost of all raw materials and packages used in the manufacture of the insecticide being priced.

(ii) If a manufacturer cannot otherwise determine his maximum price, he shall apply to the Office of Price Administration for authorization to establish a maximum price in acgraph (b) (7) of this appendix.

(d) Finished rotenone insecti-

cides for sale by wholesalers. The maximum price which the manufacturer may charge the wholesaler, as established by this regulation, plus the wholesaler's customary margin on sales of such insecticides to retailers.

APPENDIX B - MAXIMUM PRICES FOR PYRETHRUM AND PYRETHRUM PRODUCTS

The maximum prices below are, in general, for the material in large containers. Where no specific provision is made for pricing sales in small con-tainers, the seller may add, on such sales, his customary "small package" differentials.

(a) Pyrethrum flowers for sale to processors. 25 cents per unit of pyrethrins per pound of flowers, seller to costs of freight, insurance. entry, analysis, weighing and the like. ex-dock at port of entry.

(b) Unfinished pyrethrum products for sale by processors and dis-tributors—(1) Finely ground pyrethrum powder from whole flowers. 37.5 cents per unit of pyrethrins per pound

of powder, f.o.b. processor's plant.

(2) Flowers ground for percolation. 35 cents per unit of pyrethrins per pound of ground flowers, f.o.b.

processor's plant.
(3) Finely (3) Finely ground powder from exhausted flowers. per pound, f.o.b. processor's plant.

(4) Finely ground pyrethrum powder consisting of a combination of whole and exhausted flowers. Five cents per one-tenth unit of pyrethrins per pound of powder, such price in no event to exceed 25 cents per pound. f.o.b. processor's plant.

(5) Pyrethrum dust bases containing not less than 1 per cent pyrethrins. 55 cents per unit of pyrethrins per pound of the dust base, f.o.b. proc-

essor's plant.

(6) Oleoresins or unpurified pyrethrum concentrates. 44 cents per unit

of pyrtehrins per pound of the prod-uct, f.o.b. processor's plant.

(7) De-waxed or purified pyr-ethrum concentrates (meeting speci-fications for use in aerosol bombs). 52 cents per unit of pyrethrins per pound of the product, f.o.b. processor's plant. (8) Pyrethrum liquid extracts. A

price for extracts, of concentrations as specified, in containers of 50 gallons capacity or larger, f.o.b. processor's

									Standard byrethrins	Price f	er gallon
Strength of extract							content ber 100 c.c.	Regu-	Deodor ized		
								(Grams		
5:1		*	*			. ,		×	0.5	\$1.90	\$2.00
10:1									1	3.70	3.80
20:1		×			,				2	7.15	7.25
30:1									3	10.65	10.75
40:1									4	14.20	14.30
60:1									6	21.20	21.30

For sales in containers of less than 50 gallons capacity there may be

	e of conta															A	d	d	1	pe	er	gallon
30	gallons			×		•	×	*		×	8	,	4	,			*	×	×		×	\$0.10
15	gallons		×						×	×												.15
	gallons																					.30
5	gallons	0	r		S	n	18	al	11	e	r											.35

¹ If containers of capacities other than those specified are used, the maximum price per gal-lon shall be the same as for the next larger size container which is specified.

(i) Other unfinished pyrethrum products. If a processor cannot otherwise determine his maximum price, he

shall apply to the Office of Price Administration for authorization to establish a maximum price in accordance with the provisions of paragraph (b) (7) of Appendix A.

(c) Finished pyrethrum insecticides for sale by manufacturers—(1) Finished pyrethrum insecticides sold during the year ended March 31, 1942 The price charged to a purchaser of the same class for the last sale prior to April 1, 1942, plus 1.5 cents per one-

tenth unit of pyrethrins per pound of the insecticide

(2) Finished pyrethrum insecticides not sold during the year ended March 31, 1942. (i) The price for the most closely similar insecticide for which a maximum price is established in subparagraph (1) above plus or minus, as the case may be, the differ-ence between the total cost of all raw materials and packages used in the manufacture of the similar insecticide and the total cost of all raw materials and packages used in the manufacture of the insecticide being priced.

(ii) If a manufacturer cannot otherwise determine his maximum price, he shall apply to the Office of Price Administration for authorization to establish a maximum price in accordance with the provisions of paragraph (b) (7) of Appendix A.

(d) Finished pyrethrum insecticides for sale by wholesalers. The maximum price which the manufacturer may charge the wholesaler, as established by this regulation, plus the wholesaler's customary margin on sales of such insecticides to retailers

This revised regulation shall become effective July 15, 1944.

Note: All record-keeping and reporting requirements of this regula-ion have been approved by the Bureau of the Budget in accordance with the Federal Reports Act of 1942.

Issued this 30th day of June, 1944. CHESTER BOWLES, Administrator

DISINFECTANT SYMPOSIUM

(Continued from Page 101)

Thus the F.D.A. coefficient method does not in any way show the change in efficiency with change in concentration. A 1 to 1000 dilution of mercuric chloride is twice as effective as 1 to 2000 dilution but, in contrast, a 1 to 100 dilution of phenol is 64 times more effective than a 1-200 solution.

If the use-dosage is set by the rule of five times the minimum killing dilution on two compounds, one with a poor dilution coefficient and one with a good dilution coefficient, the resulting use-dosages are not in any degree comparable.

Organic Matter

Many methods of measuring the action of disinfectants in the presence of organic matter have been devised. The present procedure of testing according to F.D.A. specifications in the presence of 10 per cent horse serum offers an acceptable method from a regulatory standpoint but presents data which may be badly distorted or in-correctly applied in the interpretation of germicidal values.

For example, let us examine some where the killing dilutions have been obtained for organic matter con-tents ranging from zero to 10 per cent. The killing dilutions for three comnounds follow:

Killing Dilutions

% O.M.	Quat. Ammonium	2 chloro 4 phenyl* phenol	Ortho phenyl* phenol
0	22,000	13,500	2,400
1		9,000	
2	16,000		
3		7,500	2.200

4	9,2000		
5	-,	6,000	2,100
6	7,400		
7.5		4,500	2,000
8	5,800		
9			
10	5,200	4,000	1,900

The data and the accompanying graph show that the quaternary am-monium compound is affected very seriously by the presence of organic matter, particularly in concentrations up to 4 per cent, dropping from a killing dilution of 1 to 22,000 in the absence of serum to 1 to 9,200 in the presence of 4 per cent serum. The 2 chloro 4 phenyl likewise showed a marked drop but to a less extent, the drop being only half as much. The ortho phenyl phenol on the other hand dropped only a slight amount even in the presence of 10 per cent serum.

To obtain a better comparative picture, suppose we graph our data on a percentage reduction in killing dilu-tion so that we can avoid the wide divergence due to a wide difference in killing dilutions. The same picture is obtained but we now note that the reductions from 4 per cent to 10 per cent serum are approximately the same. What does this indicate? Does it mean that the quaternary ammonium com-pound and the 2 chloro 4 phenyl phenol are readily neutralized by organic matter and ortho phenyl phenol is highly stable in its presence or can other interpretations be applied?

It may be argued, assuming the neutralizing value of the serum to be the same on all three compounds, that

, 1944

^{*} Data from files of Dr. Paul Wolf-Biologi-cal Research Laboratories Dow Chemical Co.

LOOKING AHEAD

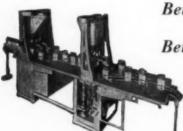
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the same amount of compound would he neutralized for the same quantity of serum. Inasmuch as the more germicidal compounds carry more germicidal action per unit of compound, it is readily seen that the more germicidal compound will be knocked out more rapidly until the serum has been satis-fied when a stabilized condition would result wherein the addition of further amounts of serum would have only a sight effect. The curves (Fig. I and II) for both the quaternary ammonium compound and the 2 chloro and 4 phenyl phenol show this to be true.

On the other hand, because ortho phenyl phenol is less germicidal, more material must be added to ob-tain killing action. This would mean that considerably more reactive material would be added for neutralization with the serum. Thus additions of serum would cause only slight reductions in germicidal action and the curve for additions of 1 to 10 per cent with ortho phenyl phenol would be similar to those for the other two compounds where serum doses of 10 per cent or

more are added.

Although chemical agents vary considerably in their reactive power and their property of being adsorbed in a colloidal system, still this characteristic of inactivity in the presence of organic matter is always greater in ompounds with high germicidal ac-

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It is not my intention to show that compounds such as the quaternary ammonium compounds and 2 chloro 4 phenyl phenol are no more affected by organic matter than ortho phenyl phenol, but to show that we may be making a serious mistake to argue the walue of high phenol coefficients as a measurement of germicidal value, or to argue the inefficiency of such compounds because of the marked percentage of reduction in kill in the presence of organic matter.

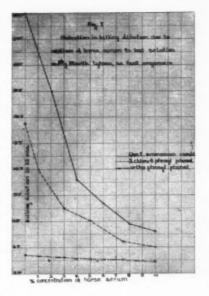
If we are to compare these com-pounds for practical usage by means of phenol coefficients, then we should rate them on the basis of their activity in the presence of organic matter. For example, the relative relationship of these three compounds would be:

Quaternary ammonium . . 5,200 2 chloro 4 phenyl phenol 4,000 Ortho phenyl phenol 1,900

pH Effects

The activity of a germicidal agent may be materially affected by the pH of the menstruum. Even in determining a phenol coefficient, serious errors may enter with the result that totally different results may be obained not characteristic of the product under test, for example, in the use of Bacto-disinfectant testing medium, which has been suggested as a replacement or substi-(F.D.A.). standard broth Staphylococcus aureus attacks the lactose in the medium with acid produc-tion. The reaction after 24 hours incubation will be approximately pH 4.5. With this medium, a quaternary am-monium compound showed a killing dilution of 1 to 800. When the pH of the medium was adjusted to pH 7.2 just prior to use of the culture, a killing dilution of 1 to 20,000 was obtained.

In another series of tests (2) this same compound was checked for bactericidal activity at pH settings of 5,



and 9. The results obtained with a to 1,000 dilution after one minute's exposure were as follows:

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pH	5				*		×		*	*				55,6	
pH															
pH															

Cationic type compounds (quaternary ammonium) function with greatest efficiency in alkaline solutions.

2 chloro 4 phenyl phenol, on the other hand, showed an opposite effect. Using Eberthella typhosa and a one per cent horse serum, 1 to 8,000 dilution failed to kill in 10 minutes at pH 8.2 whereas at pH 7.6, a 1 to 9,000 killed in five minutes.*

The phenol coefficient may be affected by the pH so that the resultaffected by the pH so that the resulting dilutions may not indicate activity under actual use. In the preparation of dilutions for test, buffer action may be lost and marked pH changes may occur. For example, in testing 2 chloro 4 phenyl phenol, the following was obtained: *

Killing dilution	pH of dilution
1-13,000	5.9
1-14,000	6.1
1-15,000	6.2
1-16,000	6.2

The effects of pH are quite ap-parent and the need of a number of compounds to fill all roles in general disinfection where pH conditions differ is certain.

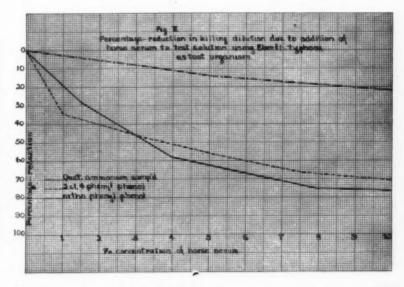
The phenol coefficient serves a good purpose from a regulatory standwherein preparations are evaluated to determine whether they meet government specifications but it is highly unsatisfactory as a use measurement. Compounds should be tested in dilu-tions recommended by the manufacturers. Our laboratory attempts practical application tests whenever feasible, because the writer believes that the effectiveness of the use dilution is the final test.

Recently in the writer's labora-tory a formaldehyde preparation was examined. This compound when tested by the F.D.A. phenol coefficient procedure failed to kill Staphylococcus aureus in a dilution of 1 to 6 in 10 minutes, still when tested in strength, Staphylococcus aureus could isolated in even a minute although massive doses of organisms were used and steps were taken to eliminate bacteriostatic action in the culture medi-um. On the basis of the phenol coefficient, the preparation would be considered unsatisfactory but on the basis of use dilutions, it did a satisfactory

In the preparation of a disinfectant, the phenol coefficient may serve a good use in aiding in the selection of the ingredients and in checking the resulting mixture for stability but the final analysis should be a use-test. A standard use-test should be developed.

Because we have little data on use-test, it is extremely difficult for one to offer comparative values on various disinfectant compounds.

WHAT properties of disinfectants may influence trends in disinfection?



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Toxicity

Toxicity is largely a relative factor in the evaluation of a disinfectant depending upon the application to be made and the use dilution. For example, the writer has developed a process of treating shell eggs with an oil containing penta chloro phenol. This substance has marked toxicity and would be objectionable in strong concentrations.

However, the use-dilution is so great that the compound cannot be detected chemically in use, but still it serves to stop microbial activity and hence it is an acceptable means of egg treatment.

Many of the new disinfectants on the market, particularly the quaternary ammonium compounds have very low toxicities. The same is true of some of the new phenolic derivatives. Without question the low toxicities will be an advantage over old toxic products.

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Penetrability

At the present time there is no ood method of measuring the penetrability of disinfectants. The agar cup procedure which is frequently used. measures diffusion-not penetration. In a study made by the writer (3), a number of antiseptics were tested for penetrability and it was found by testing on avian coccidia that only one, colloidal iodine, could destroy these organisms. This product in a 1 to 20 suspension killed 100 per cent in 10 minutes whereas tincture of iodine in the same concentration failed in 24 hours. The writer does not know, at the present writing, of any synthetic compound that will destroy avian coccidia. Any compound that can destroy these organisms rapidly will destroy all forms of bacteria and fungi with even greater rapidity. Incidentally, there is a distinct need of poultry house disinfectant that will kill these organisms.

Not only do most disinfectants fail to kill coccidia but they also lack the power to pass through organic matter and destroy embedded bacteria. One of the properties we would like in a disinfectant would be this property of good penetrability. Such a product, granting that its other properties were acceptable, would serve a great need in veterinary disinfection. Unfortunately, none of the new compounds which we have tested show this characteristic. Such a product would prove very ac ceptable because it would not only kill resistant organisms such as coccidia but it would also penetrate through dirt and destroy the embedded micro-or-

Speed of Reaction

Most organic type disinfectants react very slowly even when present in excessive doses. The fastest acting disinfectants known at the present time are the halogens, such as colloidal iodine and the hypochlorites. In the absence of organic matter, 1 p.p.m. of chlorine will kill 100,000 Escherichia coli per ml. in 15 seconds. Thompson and associates (4) have found that Zephiran chloride will kill in 15 seconds. The writer has had similar experiences with several of the quaternary ammonium compounds. However, Valko and DuBois (5) tound that if the compound was neutralized by the addition of an anionic type compound, the organisms would recover. Even then, however, the product still has considerable speed. The phenol derivatives are considerably

slower. Under conditions where minimal doses must be used, the cationic type products could compete with chlorine for rinsing glassware and utensils. Where contact periods of 3 or more minutes occur, the pnenoi derivatives do an equally good job in proper concentrations

Detergent - Germicides

There exists a need for a detergent-germicide. In the past the writer has been opposed to such products because the disinfectants on the market have been rapidly destroyed in the presence of organic matter. The new phenolic compounds and the quaternary ammonium compounds which have marked capacity to remain active in the presence of organic compounds may be introduced into special type detergents that theoretically could remain active over the life of the detergent. Depen-dence for disinfection should not be placed wholly on such products but (Continued on Page 131)

DISHWASHING SANITATION

(From Page 31)

indeed timely. It is true that it is difficult during these days with a limited inspection personnel for health officers to enforce satisfactorily ordinances and regulations relating to sanitizing eating and drinking utensils in public eating places. However an educational program such as the one put on by the U. S. Public Health Service for health officers and inspectors and the one instituted by the city of Newton, Mass., for restaurant and tavern owners will materially aid in bringing to the attention of both health officers and owners the paramount importance of the possibility of the transmission of disease by means of unsanitary eating and drinking utensils.

* Editor's Note: At the meeting of the Dis-infectant Scientific Committee it was decided to study methods to evaluate chemical germicidal rinses for hand washed dishes. We hope this study will be exhausted to include detergent-bactericidal solution for both hand and machine washed dishes.

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ARE INSECTICIDES LUXURIES? (From Page 97)

mechanical means for use, but not because they are considered luxuries. It has been shown that household insecticides can not be considered luxuries, because they contribute not only to comfort, but also to health. When more people realize how much insecticides may contribute to health, they will consider them every day items.

Instead of being inhibited in their use of household insecticides by such terms as luxury, people should be encouraged in their use by every means possible so that their comfort and safety may be improved. The manufacturer must make better insecticides for a reasonable price and tell about them in accurate language. The Government and all educational institutions must instruct the people in the improvement in health and comfort by destruction of insects by insecticides. Both sides of the railroad track must find insecticides available and effective for a reasonable consideration.

The people are entitled to "life, liberty and the pursuit of happiness." Let it be expressed then in a bill of rights that no one shall by speech or writing deprive the people of, or make less available to them, insecticides which contribute not only to their comfort, but also the health and the preservation of life, and furthermore that all means shall be employed to increase the use of household insecticides where they are indicated, for comfort and for health and for life itself.

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OVER THE RANSOM

by Preston Peaker

X/ASHINGTON—Most encouraging news insecticide manufacturers have had for some time is the prospect that perhaps by the end of the year some as yet undetermined quantity of pyrethrum may be made available to them. It is reported that adequate stocks of flowers are in hand or afloat to take care of the aerosol program for a safe period, and that rather than attempt to build stocks any higher, some part of future arrivals may go for certain essential civilian needs. Agriculture will get first call, but it may very well be that sufficient flowers will be available so that household insecticide manufacturers will also be given a percentage of some base period use. The plans are of course still distinctly in the tentative stage. They could be changed completely by failure of additional material to arrive, or by a possible unexpected increase in the aerosol program. If and when pyrethrum becomes available for essential civilian use, it is quite possible, we understand, that some of the available supply may be offered for use in aerosol form.

The DDT production program is reported currently to be well ahead of schedule. Present rate of production is believed to be in the neighborhood of 750,000 lbs. per month, with every prospect that the WPB goal of 1,900,000 lbs. per month will be reached by the first of the year. This is truly a remarkable record,—a tribute to intelligent government direction and able American industry—when we take into account that only a little over a year ago the rate of output was but 1,000 lbs. per month.

Potash soapers who recall with what little enthusiasm they faced the suggestion, advanced a year or so ago, that linseed oil be diverted to the soap kettle, can now relax. Once again the supply situation has done a complete turn about within a short period. Instead of being in oversupply, linseed now

threatens to join rosin on the list of items in tight supply position. The current American crop is now estimated at but 26,000,000 bushels of flax, as compared with the bumper crop of 50,000,000 bushels last season. There will be no more talk, for a while at least we can guarantee, of using linseed in soaps.

Just what happened, the WFA is wondering, to those potash soapers who were howling a few months back for supplies of open head steel drums. After going through considerable maneuvering to make supplies available, WFA officials were rather surprised at the relatively small number of soapers who took advantage of the opportunity to replenish their supplies. It recalls the situation a year and a half ago when potash soapers went to Washington in a body to ask for release of linseed oil, and then when it was made available to them promptly surprised the WFA by taking only token quantities. Remember the story about the little girl who cried "Wolf" too often?

The exodus from Washington continues. With fewer materials now subject to government controls, it is being found possible to let some of the volunteers from private industry get back to their regular jobs. Dr. A. E. King of the soap and glycerine division of WFA recently returned to Swift & Co., leaving Messrs. Lenth, Stingley, McConologue and Jamieson to carry on the work of the division. T. S. Pritchard, chief of imports and allocations, fats and oils branch of WFA, has returned to the New York office of Wilbur-Ellis. T. P. Lydon bas taken over his duties as chief of this unit.

Aerosol bombs are being sold for civilian uses in the British West Indies. Reports coming from Trinidad say that Masons, Ltd. are selling them there for civilian uses at \$3 per pound cylinder, which is about equal to \$2.40 American, and are refunding \$1 for the returned container. Although we understood that these aerosol bombs were being produced for use of the armed forces solely, we have the names of three companies, not to mention private individuals, who have purchased them for private use. To mention that the ire of some American insecticide companies has been aroused by this news is to put it mildly indeed.

Soon to be published by Mac-Nair-Dorland Co. is a new, complete and up-to-date text on insect pests and their control. The author is Arnold Mallis, research fellow for Hercules Powder at the University of Delaware. The book will be well illustrated and carry an unusually complete bibliography. Designed for use by insecticide manufacturers, entomologists, pest control operators, army and navy officers in charge of sanitary control, etc., its emphasis is on control methods. It will number in the neighborhood of 600 pages and we hope that copies will be available late this fall.

Dr. G. F. MacLeod of the WFA, who has just returned from the west coast, told members of the DDT Producers Industry Advisory Committee at a recent meeting, that west coast insecticide experts are enthusiastic about the use of DDT for the protection of food crops from agricultural pests. Test studies on apples, onions, oranges and grapes indicate a very effective degree of control. Dr. MacLeod also returned with first hand evidence which seems to controvert the charge that DDT is death to bees and thus where used prevents cross pollenation. While DDT may have an adverse effect on bees when first applied, Dr. MacLeod's observations indicated that at later stages it does not exhibit the same lethal effect, while still retaining its toxic action against insect pests.

Readers of this column are hereby advised that if they want to startle their friends by appearing "hep" to the inside Washington doubletalk, the latest overworked word is "level." Everything is on the "executive level," the "expert level," the "baloney level," etc. Fit this "level" business into each conversation about three times and you will sound as if you were just "out of Washington."

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17 PLANTS To Serve the Nation

TRADE VEWS ...

A.J.F.A. Meets Sept. 6, 7, 8

The eleventh annual meeting of the Agricultural Insecticide and Fungicide Association will be held Wednesday, Thursday and Friday, September 6, 7 and 8, at the Hotel Essex and Sussex, Spring Lake, N. J. Although a definite program has not as yet been arranged, the general discussion will center around the outlook for supplies for agricultural insecticides and fungicides for the crop year 1944-45, production for which begins around September 1, for the A.I.F.A people. Representatives of various war agencies: the W.P.B., W.F.A. and O.P.A. will be on hand to discuss the outlook for the coming year. Although the supply picture on raw materials for agricultural insecticides and fungicides has been pretty tight over the past few years, some degree of improvement is expected in the supply picture for the coming year. A forecast of the outlook based on reports of findings, inventories, etc., given at the meeting will be issued shortly after the close of the meeting.

C. J. Dumas Joins Geigy

Geigy Company, Inc., New York, developers of DDT, announce the appointment of Charles J. Dumas as manager of their insecticide division.

After getting entomological training at St. Lawrence University, Mr. Dumas spent twelve years in commercial farm management. For a time he was attached to the United States Department of Agriculture in its fight in Florida against the Mediterranean Fruit Fly and in New York State in control work on the Japanese Beetle and European Corn Borer. Later he operated the specialties division of the Sinclair Refining Co., leaving to become manager of the insecticide and fungicide department of Rohm and Haas Co.

Altogether, Mr. Dumas has had a background of twenty-five years in the insecticide industry, covering all phases from marketing to application in both the household and agricultural



C. J. DUMAS

fields. He has had an extensive association with manufacturers, distributors and technical experts. For Geigy, he will take over at once management of its activities in "Gesarol," "Neocid" and other phases of the DDT family, as well as all other insecticidal interests of the firm.

Ten Millionth Insect Bomb

The ten millionth aerosol insecticide bomb recently rolled off the production lines of Westinghouse Electric & Manufacturing Co., East Springfield, O., according to a release issued July 9. The announcement was made by H. J. Burgess, assistant works manager of the East Springfield plant. Aerosol bombs are being produced at both the Electric Appliance division headquarters in Mansfield, O., and at the East Springfield Works of the division.

N.A.I.D.M. Lists New Members

The National Association of Insecticide and Disinfectant Manufacturers, Inc., New York, following its recent mid-year meeting, has just issued the following list of new members: (Active) Baldwin Laboratories, Saegertown, Pa.; Douglas Chemical & Supply Co., Kansas City 8, Mo.; Emulsol Corp., Chicago 3; Gallowhur Chemical Corp., New York 17; S. Pfeiffer Mfg. Co, St. Louis; Polk Miller Products Corp., Richmond 20, Va.; (Associate) H. D. Huson Mfg. Co., Chicago 11; Lowell Mfg. Co., Chicago 11; and Sparklet Devices, Inc., division of Knapp-Monarch Co., Newark 8, N. J.

Sees Big Postwar Insecticide Use

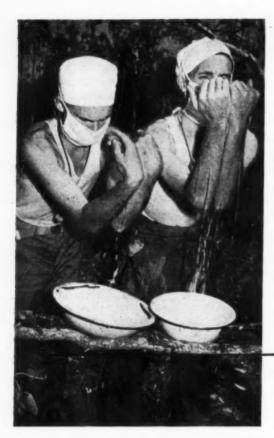
Prediction of a more general postwar use of concentrated insecticides was made recently, based on a survey of the drug and chemical industries compiled for the postwar planning committee of the National Paper Box Manufacturers Association, Philadelphia. Assuming that the European war will be over in 1945, the drug and chemical survey estimated that gross sales will drop in that year to 5.8 per cent below those for 1943 and then rise in the following years to a peak of 18.2 per cent at the end of 1948. The drug survey further revealed that in the postwar period there will be a strong demand for set-up, folding and corrugated boxes for new chemicals, germicides, insecticides, etc.

England Manages Jas. Good

A change in the management set-up of James Good Co., manufacturing chemists, Philadelphia, was announced July 6. Robert England will now operate the business under the same name, thus succeeding Mabel Meehan Schlimme and Philip C. Herr. The announcement of the change states that there will be no other change in management or personnel.

Penick Purchase Cie. Duval

The purchase of Compagnie Duval, New York, essential oil firm, by S. B. Penick & Co., New York, insecticide materials, was announced July 17. In making the announcement of the purchase, S. B. Penick & Co. stated that the entire Duval personnel will continue to operate intact as a unit of Penick's essential oils and aromatic chemicals division. Compagnie Duval began the production of perfume, flavor specialties and the sale of allied products in 1914 for domestic



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Let your customers do their own mothproofing with "Per-Mo." The Guaranteed Mothproof Liquid. It acts like a colorless dye in impregnating fabrics, has no odor and will not spot or stain. Literature and Full Particulars first letter.

PER-MO MOTHPROOF CO.

3729 S. VIRGINIA AVENUE KANSAS CITY 3, MO. and foreign consumption. The enlarged facilities now at its disposal will permit Duval to operate not only in its specialized lines of products but also in essential oils and aromatic chemicals, the Duval announcement continues.

Boric Acid Bill Vetoed

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Mayor F. H. LaGuardia vetoed the Vogel Bill, July 11, which would require all containers of boric acid to bear a "poison" label. Among the reasons given for the veto in a memorandum of disapproval accompanying the bill, which was returned to the City Council, the Mayor indicated that there was some doubt in his mind as to the jurisdiction of the City Council over the subject matter of the bill. Further, he pointed out that the Board of Health had amended its Sanitary Code to include Section 127 requiring a "caution" label on boric acid.

New Letter Circular on Polishes

The National Bureau of Standards, U. S. Department of Commerce, Washington, D. C., has just issued a new letter circular (LC 753) reviewing the formulation of various types of polishes. The Bureau does not recommend standard formulas or specifications for polishes, its circular being rather a non-critical review of the literature on the subject for the past eight or ten years, summarizing the suggested formulations of various writers for furniture, metal, glass, furniture, shoe, floor, automobile, stove and other polishes. The Bureau has also released a new letter circular on sweeping compound (LC 754).

Name Insecticide Advisory Group

Represented on a five-man industry advisory committee of western mixers of various agricultural insecticide and fungicide dusts containing rotenone to consider pricing actions to be taken on such commodities by the Office of Price Administration are the following members of the recently formed Western Rotenone Dust Mixers' Industry Advisory Committee: A. J. Flebut, California Spray - Chemicals Corp., Richmond, Calif.; R. A. Lamoree, Stauffer Chemical Co., San Fran-



Principals in the Army-Navy "E" award ceremonies at the plant of Cole Laboratories, Long Island City, N. Y., are, left to right: Col. Edgar W. Garbisch, U. S. A., who presented the "E" award; Lt.-Commander Leonard R. Woods, U. S. N. R., who presented the "E" emblems; Vincent Guido, who accepted the emblems for the plant employes, and David Catts, president of Cole Laboratories.

cisco; Roy E. Miller, Miller Products Co., Portland, Ore.; D. A. Zanette, Chipman Chemical Co., Palo Alto, Calif.; and Elmer J. Davis, Los Angeles Chemical Co., Los Angeles.

DDT Controls Spruce Bud Worm

Experiments with the use of DDT in the Rocky Mountain National Park and the Roosevelt National Forest in Colorado have indicated that this new insecticide is effective in controlling the spruce bud worm, according to Robert Geiger, writing in the June 25, 1944, issue of the Duluth, Minn., News Tribune. L. W. Orr, senior entomologist for the U.S. Bureau of Entomology & Plant Quarantine, Beltsville, Md., has recently returned from a trip to Colorado where he observed results of control tests. DDT acts as both a contact and stomach poison against the spruce bud worm, and spraying of entire forests from helicopters may be an effective post-war control method. Experiments with the use of DDT in the control of potato psyllid are being conducted by Dr. George M. List of Colorado State College whose initial report is that DDT is more effective than the customary lime-sulfur spray.

Cole "E" Presentation Made

Presentation of the Army-Navy "E" award for high achievement in production was made to Cole Laboratories, Inc., of which Retort Pharmaceutical Co. is a division, July 9, at the Cole plant, Long Island City, N. Y. An address of welcome was given by Ambrose B. Acker, president of the Queens Chamber of Commerce. Presentation of the "E" pennant was made by Col. Edgar W. Garbisch, district engineer, New York District, Corps of Engineers, and accepted by David Catts, president of Cole. Lt. Commander Leonard R. Woods, U.S.N.R., presented the "E" pins to the plant employees.

Can Production Soars

Although the number of cans available for civilians has been cut sharply as a result of the war, "the over-all number of cans in actual use today is greater than the peacetime total," according to a statement released early last month by F. J. O'Brien, president of the Can Manufacturers Institute. Normally in peace time more than 2,500 products, including soaps, insecticides, cleansing fluids, waxes and polishes, chemicals, etc., manufactured

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Recognizing its strategic value in the control of certain insects and pests, the use of Rotenone has been restricted to the needs of the Armed Forces, the protection of a limited number of vital agricultural crops, and the control of warble fly on cattle.

Many peace-time users of Rotenone for other purposes have had to readjust their plans to get along without Rotenone, and have done this willingly, appreciating that Rotenone has an important job to do in the winning of the war.

Those who need Rotenone for the specific purposes for which it is now reserved will be glad to know that we have still available supplies of ROTENONE and ROTENONE RESINS and from time to time expect to have ROTENONE POWDERS.

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NEW YORK, N. Y.

or processed by 135 industries are packed in steel containers, Mr. O'Brien declared. He added that the industry is still "neck-deep" in war work, and that the war situation has not cleared to the point where any increase can be foreseen in tin cans for the consumer in the immediate future. However, he said, hope is held that as stock-piles grow and the fulfillment of urgent demands for landing craft, steel landing mats, etc., leaves more steel available for other uses, more and more civilian products will be returned to market in their normal, peace-time containers.

DISINFECTANT SYMPOSIUM (From Page 123)

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they could aid materially in reducing the contamination load for final disin-fection. Certainly the addition of the proper disinfectant to a detergent has indicated merit.

Conclusions
THE advantages and disadvantages of disinfectants in general have been discussed, keeping in mind throughout the fact that you are looking forward to post-war markets with the intention of entering that market with the most useful disinfectant line possible.

There will be no material change in the post-war market except that a consumer desire is gradually developing for a disinfectant without objection-However, this will be able odor. gradual development because we still find the average consumer measuring his disinfectant by odor. The writer has talked to many veterinary audiences on disinfectants and stressed the fact that good disinfection can be attained without the need of a coal-tar or pine oil odor. He has had some enthusiastic converts but he has noticed that the majority still turn to the old accepted pine oil and cresol types. Nevertheless, the trend to odorless products is on and with the return of peace, there will be a marked demand for this type of product.

The new high-coefficient-type compound both quaternary ammonium type and chloro phenols will unquestionably find many acceptable uses. In the relative absence of organic matter such as restaurant dishware, the quaternary ammonium products will find a ready market. Cold disinfection of glassware has been done nearly exclusively with hypochlorites. The writer was one of the first to advocate the use of hypochlorite and carried on several city-wide campaigns successfully by this means. The writer has observed, however, a reluctance on the part of the operator to use chlorine because of its objectionable odor. The quaternary ammonium compounds should preempt this field with better results than have been obtained with chlorine disinfectants. These products will undoubtedly find acceptance in many phases of the dairy industry and food processing plants where a non-odorous non-toxic disinfectant is indicated.

The high-coefficient compounds will also find some acceptance in the field of general disinfection. However, they must compete in price with the phenolic derivative preparations with a phenol coefficient of five. Due to the fact that the high phenol coefficient compounds are materially reduced by the presence of organic matter, they must compete within a fairly narrow Most of the general disinfectant fields will continue with the cheap phenolic preparation, yet if the cationic type and phenolic derivatives become cheap enough, they will likely share the field to a greater extent.

A need exists for germicides with high penetrability characteristics. need exists for germicides with high

speed reaction times

A field of detergent-germicides has been opened by synthetic germi-cides that behave well in the presence of organic matter. The field needs de-

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NAIDM Meeting Developments

Following the recent mid-year meeting in Chicago of the National Association of Insecticide and Disinfectant Manufacturers, a bulletin issued July 10 by the office of the secretary outlines some of the decisions reached.

The Disinfectant Scientific Committee, under the direction of C. L. Weirich, general chairman, is working toward the modernization of the phenol coefficient test, and is also attempting to develop a chemical germicidal method for testing rinses for handwashed dishes.

An Exhibit Committee has been appointed by Henry Nelson, NAIDM president, to prepare a permanent exhibit to be shown by the organization at meetings of health, safety, educational, hospital and other groups. It is also planned to issue a booklet for distribution in connection with showings of the exhibit. A. W. Morrison of Socony-Vacuum Oil Co. is chairman of the Exhibit Committee. Other members are John A. Marcuse, West Disinfecting Co., John Powell, John Powell & Co., H. W. Hamilton, White Tar Div. of Koppers Co., and Ira P. MacNair, MacNair-Dorland Co.

An additional appropriation has been made for the completion of the work on testing of liquid sprays against roaches being conducted by Dr. Frank O. Hazard at Wilmington, Ohio. A new appropriation will allow for extension of the test studies to roach powders as well.

The association has revised its model insecticide and fungicide law. This draft will be suggested as a uniform model to states that are considering such legislation, and will be offered as a substitute for existing state regulations which have proven unworkable.

ROSIN OUTLOOK (From Page 111)

the mere economics of the situation. Rationing or allocation to the contrary, price remains the determining factor. Soap makers, it was pointed out, will use six-cent rosin in preference to 85/8 cent tallow or even more expensive oils in as large quantities as are feasible.

Whether recent high rates of rosin use in soap can continue is, of course, at this writing when talk of allocation is rampant, purely speculative. With rosin still a cheap raw material even at present higher prices, however, and one used as a soap raw material over the years, rather than being a war-time substitute, it is felt likely that it will continue to be used in considerable quantity. Its use in soap for synthetic rubber, it is understood, should continue, since the rubber program's importance should carry a high enough priority rating for soapers to get rosin in sufficient quantity for such use.

The immediate outlook for rosin-considered a "hot subject" in Washington-will depend very largely on whether or not the WPB and the Manpower Commission people can get together and effect some kind of relief for the rosin producing industry. The equipment needs of the industry, for trucks, for example may be largely clarified when the results of the WPB's study of this situation are published. Meantime, the consumer of rosin has to tread lightly between the sharply divergent views as to whether there will or will not be enough rosin to go around.

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insures proper application of insecticides under the most difficult conditions. Its powerful motor (¼ to 1 h.p.) shoots insecticides up to 20', penetrating cracks, crevices and hard-to-reach places. Tell us about your problems and requirements.

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Announcement . . .

E. G. Thomssen is pleased to announce that he is now available as a consultant to manufacturers and others particularly in the fields of insecticides, disinfectants, floor waxes, soaps and allied products—Special attention to government specification products. Plant lay-out, equipment design, product formulation and costs, and general production problems can be undertaken backed by twenty-five years of both large and small scale practical plant experience.

E. G. THOMSSEN, Ph.D.

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Revise Disinfectant Spec.

A complete revision of the tentative disinfectant specification, originally circulated by the U.S. Treasury Department Feb. 11, 1944, has recently been released by J. L. Jones, chief of the specifications division of the department. It is reported that most of the industry suggestions for change made at the time the first draft of the specification was released have been made. Industry opinion is still reported strong, however, toward the belief that the specification should be described as one specifically for quaternary ammonium disinfectants, rather than being designated, as it now is, as applicable to disinfectants for general use.

DDT Patent Correction

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In our DDT Bibliography, published in the May, 1944 issue of Soap & Sanitary Chemicals, (pps. 107-109) we stated incorrectly that DDT had first been patented as an insecticide material in Germany in 1939. We are now advised by the Geigy Co. that a patent application was filed in Germany March 7, 1941. Due to the suspension of normal communication with Germany, no positive information is obtainable as to whether or not the German patent has ever been granted.

Report on Insecticide Studies

Approximately 700,000 pounds of dinitro dust have been utilized by Illinois farmers this season in building barriers around their fields for chinch bug control. Use of the dust was recommended by the Illinois Agricultural Experiment Station entomologists, who developed methods of application as a substitute for creosote which, in 1943, was practically unobtainable.

Reviewing the Illinois station's other activities in the search for substitute agricultural insecticides, Dr. George C. Decker, station entomologist, stated that "an old but very useful" insecticide, cryolite, has been proven to be a safe substitute for rotenone to protect a number of truck crops from leaf-feeding insect pests.

Attacking the problem of critical shortages of certain insecticides from another angle, the Illinois sta-



"Can I help it if all this talk about DDT makes our flies nervous and throws our Peet Grady results away off?"

tion has been studying cultural practices to determine how they may be used to decrease insect infestations, thereby eliminating or reducing the demand for insecticides on certain plants. "The delayed planting of sweet corn," said Dr. Decker, "has been quite effective in bringing this crop into production between generations of the European corn borer, thereby producing a clean crop without use of insecticides."

New Athletes' Foot Product

Sulfa Products Co., Kansas City, Mo., has announced a new liquid sulfa drug compound, "Pso-Ridisal," containing sulfanilamide, which is recommended for use against athlete's foot or ringworm, among a list of other skin conditions.

Toxic Ingredient in Cat Willow

Entomologists at Oklahoma Agricultural and Mechanical College, Stillwater, Okla., are continuing their studies of a toxic substance found in "cat willow," Amorpha fruticosa, which was at first thought to be rotenone, Dr. George F. Church, associate editor of the Oklahoma Agricultural Experiment Station, has an-

nounced. When first discovered, a bulletin, No. D-23, was distributed by the Agricultural Insecticide & Fungicide Association, 285 Madison Ave., New York, but, more recently, Dr. Church stated, it has been definitely proven that the toxic principle in the plant is not a rotenone.

"However," he continued, in a statement to Soap & Sanitary Chemicals, "it is very toxic to mosquito larvae, just as is rotenone, and quite possibly may be effective against some insects not affected by rotenone. Work on this project is continuing under direction of Dr. F. A. Fenton, head of our entomology department."

Issue Folder on Insecticides

Chamberlain - Haber Chemical Co., Cleveland, O., has issued a new folder dealing with the habits of roaches, waterbugs and ants and explaining how their "Nip-On" insecticide acts to control infestations.

Penick Bank Director

S. Barksdale Penick, Jr., president of S. B. Penick & Co., New York, essential oil and aromatic chemical house, was elected last month a director of Montclair (N. J.) Trust Co.

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U.S.D.A. Statement on DDT

In an effort to check some of the exaggerated stories that are beginning to appear as a result of the wide publicity DDT has received, the U. S. Department of Agriculture has issued the following clarifying and qualifying release concerning this new insecticide:

"DDT, much publicized as a louse powder and fly spray, is not a universal insecticide, effective for all agricultural purposes. We receive many requests for supplies of DDT, and for information about it, particularly from insecticide dealers, farmers, and Vic-tory gardeners," Dr. P. N. Annand, chief of the Bureau of Entomology and Plant Quarantine, said in a recent U. S. D. A. bulletin. "DDT is not now available for civilian use. While it appears to be very promising for future control of many insect pests, many of the experiments to test its effects on insects, plants, and higher animals are still in preliminary stages. Later tests may change the entire picture materially. Our entomologists have not had large enough supplies available to make large-scale tests. Consequently, we are not in a position at this time to recommend general use of DDT as an insecticide for agricultural purposes."

Tests for agricultural uses of DDT are being conducted in a number of laboratories by the Bureau of Entomology and Plant Quarantine with the small amounts of DDT now available for experimental purposes. Preliminary tests to date tend to show that DDT is one of the most effective insecticides known against such harmful insects as the gypsy moth, which defoliates and kills trees in large areas in New England, against the codling moth, the chief orchard pest, and many others reported widely in the popular press and magazines.

The Department of Agriculture entomologists say, however, that before DDT can be recommended to farmers

for use against such insects, many more tests must be conducted along the following lines:

(1) To learn if DDT injures plants. For some plants, DDT has already been found harmful, though not for most.

(2) To learn if DDT as used against insects is dangerous to livestock, wild animals, birds, beneficial insects like the honeybee, and fish. Many useful insects die after coming in contact with DDT. Will it injure animals?

(3) To learn if DDT when eaten on vegetables or fruit, in small quantities will accumulate in man, to the point of eventual serious poisoning. DDT crystals persist on sprayed walls, limbs of trees and other surfaces for a long time; flies die on walls sprayed with DDT for 3 months after spraying.

(4) To learn what mixtures, spreaders, stickers, and diluent agents are best for DDT, or what combination with other insecticides is even more toxic; and to learn what form as can be presented for the most effective combinations using DDT against various pests on different crops.

(5) To learn what quantity of the desired mixture or emulsion is required to effectually control various pests at the lower cost, and to control such pests under different conditions.

(6) To learn how DDT is best applied and best prepared for different types of application, such as with ground spray machines, in aerosol smokes, in sprays in the home, in dust form, and in other special applications.

(7) To learn if production of each of the combinations is practicable for sale at a reasonable price in relation to other insecticides which are fairly satisfactory.

(8) To determine the relative efficiency of DDT compared with other

Results of such tests to determine the true value of DDT for the control of certain insects will be made known from time to time and will be the basis for whatever recommendations are made by the entomologists.

Inedible Tallow and Grease

Production of inedible tallows and greases in the United States averaged 1,650 million pounds per year for the three year period of 1941-2-3. Earlier in the year it was predicted that 1944 production would reach a total of 1,750 million pounds. A very recent estimate by a good authority indicates a 1944 production of less than 1,600 million pounds. While stocks of June 1, 1944 are approximately 100 million pounds greater than a year ago, they are still 50 million less than reported factory consumption in soap only, and 150 million pounds less than total reported factory consumption for the first quarter of 1944.

Looking Ahead

Although soap production may be adversely affected during the balance of this year by the summer months, by container shortages, by manpower, and by consumer demand, many soapmakers seem to be fairly optimistic over the sales prospects. Also the revocation of the rosin "stretch" order and consumer demand for high fat content soaps, forecast for 1944 a higher fat content per hundred pounds of soap than that of preceding years.

Availability of soap fats has been our continuous controlling factor in soap production for the past two and one-half years and may well continue to be so for the duration. The fact that the situation at the moment is easier due to various temporary expedients, gives no real assurance that we are out of the woods, nor that we shall be until normal imports of lauric oils are restored. The soap industry is fortunate to have weathered the hazards of last summer as well as it did and to now have in sight enough fats to carry it through 1944 and perhaps through the first quarter of 1945 may see the soap fat situation again growing more critical.

Conclusion

In conclusion, it perhaps should be repeated that availability of domestic soap fats through the next 12 months depends primarily (1) on government policy in conserving edible fats for export and its ability to manage present surpluses until increased exports are feasible; (2) on the rate of tallow and grease production versus consumption; and (3) on increased imports to the United States of lauric and other oils as Pacific producing areas are liberated and brought back into normal production. This undoubtedly is our major uncertainty.

So long as present government controls on livestock and edible fats are maintained and with the prospect of declining livestock supplies and thinner animals, we should expect a declining tallow and grease production toward the end of this year. The extent of the reinforcement of tallow and grease supplies by lard allocation by the War Food Administration, is at best uncertain, and unless the demand for inedible fats for soap and other industrial products declines materially, it is not certain that production of inedible tallow and grease in the 1944-45 crop year will be sufficient to take care of all consumption requirements.

FAT and OIL OUTLOOK

(Continued from Page 62)

mands, the industry was compelled to operate with 440 million pounds less total primary fats for soapmaking in 1943 than in 1941.

During this period, government was stimulating the production of edible fat at the expense of inedible fat, and the need of inedible fat for industrial products other than soap was constantly increasing. The effects of the quadruple "squeeze" were quite painful, our total tallow and grease stocks falling below 200 million pounds in the summer of last year. This inventory was not sufficient to operate the soap industry on the basis of quotas set by the War Food Administration. Government rationing of soap was a constant threat, the "stretching" of fats with rosin became mandatory, and

soapmaking proceeded at a minimum rate only through the benefit of fat salvage, increased vegetable oil foots supplies, some imports, and the prospect of a lard surplus which permitted the allocation of limited quantities of edible fats to soap.

While it is true that in the six month period from October 1, 1943 to April 1, 1944, our tallow and grease stocks increased to 300 million pounds, it is also true that this was a period of heavy animal slaughter, that there was an important increase in waste fat collection and that 125 million pounds of edible fats went into soap. On the basis of current rate of tallow and grease consumption, there is no margin of safety in present total stocks and expected production, except as waste fat collections are continued or further allocations of edible fats to soap are allowed, or until increased lauric oil and/or other fat imports are available.

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2, 3, 4, 5 and 6 roll Granite Toilet Soap Mills.

H-A 4 and 5 roll Steel Mills.

H-A Automatic and Hand-Power slabbers.

Proctor & Schwartz Bar Soap Dryers. Blanchard No. 10-A and No. 14 Soap Powder Mills.

J. H. Day Jaw Soap Crusher.

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Positions Open

Glycerine Man: Fatty acid manufacturing plant in North Jersey desires man experienced in treating. evaporating and distilling of saponification glycerine, to take charge of its glycerine manufacturing. Permanent position, good future. Box 391, 159 East 34th Street, New York 16,

Wanted: Experienced laundry soap maker for soap factory located in Nuevo Laredo, Tamaulipas, Mexico across the border from Laredo, Texas. Our plant is five minutes drive from International Bridge permitting residence on Texas side. Must have several years experience, good character and reliable. On applying state age, experience, references and salary expected. Reply Industrias Unidas. Box 331, Laredo, Texas.



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 - 1-Houchin 10" Jumbo Plodder.
 - 1-Broughton 1500# Mixer: 1-450#.
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CLEVELAND, OHIO

424 West 18th Street, New York, N.Y.

Positions Open

Wanted: Factory Manager, one familiar with soap manufacturing for established plant in midwest. Complete charge of plant and production. Ability to handle employees and technical background in soap manufacturing required. Right man will receive substantial salary and permanent position. Apply giving full particulars of education and experience. Address Box No. 746, care of Soap & Sanitary Chemicals.

Soap Maker, experienced on Flake Soaps, also Textile and Laundry Soaps. State age, experience and salary required. Write full particulars in first letter. This is not a war job, but a permanent position for the right man. Address Box No. 748, care of Soap & Sanitary Chemicals.

Туре

ering

Wanted - A production manager with experience, imagination, executive ability, developmental capacities, and knowledge of plant efficiency to improve our present manufacturing methods and lay early plans for a new and efficient plant with the latest equipment and plant layout. Our line embraces Soaps. Waxes, Disinfectants, Insecticides, and a wide range of sanitary specialties. Knowledge of small packaging is highly desirable, as well as bulk production, plant layout and production schedules. Excellent opportunity and future for suitable man with well established and growing company doing a national business. Knowledge of chemistry preferred. Address A. L. Feldman, Puritan Chemical Company, Atlanta 3, Georgia.

Wanted, Chemist—thoroughly acquainted with the textile specialty field. Must have thorough knowledge of manufacture of detergents, sulphonated oils, finishing compounds and specialty products. Salary \$6500 for the right experienced man. Address Box No. 749, care of Soap & Sanitary Chemicals.

Engineers: An old established Cosmetic Manufacturing concern making a nationally advertised product has an important position to fill. A man who is a graduate Mechanical, Chemical or Electrical engineer with some previous experience can qualify. Give full information in complete confidence as to education and experience in first letter. Address Box No. 750, care of Soap & Sanitary Chemicals.

Positions Wanted

Mill & Dryer Operator: Middleaged, dependable, reliable, experienced, looking for position with future. Address Box No. 743, care of Soap & Sanitary Chemicals.

Miscellaneous

Manufacturers Representative with office in Charlotte, N. C. covering North and South Carolina. Georgia and Florida, contacting the wholesale and retail paint, hardware, department store, institutional and industrial trades. Interested in securing products of manufacturers with some established trade. Address Box 744, care of Soap & Sanitary Chemicals

Soap Plant — Wanted by soap manufacturer going soap plant, preferably on the eastern seaboard. Capacity about 100 tons weekly. Two or three large kettles and ample boiler facilities. Address Box No. 745, care of Soap & Sanitary Chemicals.

Insecticide Manufacturer or Paper Can Manufacturer having national distribution can obtain exclusive license for Patented Duster Sprayer, only non-sifting device of pump type, suitable for Victory Garden Pest Control and powder dusting. Address Box No. 742, care of Soap & Sanitary Chemicals.

Steel Tank For Sale. 7/16" steel plate welded, dish bottom & top, 10 feet in diameter by 12 feet high, with 18" manhole & 6" bottom outlet. Capable of holding 29" vacuum. Condition as good as new. Located 20 miles from New York. Also 1 Houchin double jacket vertical soap crutcher, 1500 lbs. capacity. Address, Carl Schleif, Box 552, Pawtucket, R. I.

For Sale: Reasonable. Glycerine evaporator — practically new. Capacity 500 lbs. per hour. Lightfoot Schultz Co., 1412 Park Ave., Hoboken, New Jersey.

Floor Brushes — We manufacture a very complete line. Catalogue sent upon request. Flour City Brush Company, Minneapolis, Minn., or Pacific Coast Brush Co., Los Angeles, Calif.

Nailing Machines Wanted: We want used Morgan or Doig wood box Nailing Machines at once. State make, size, best cash price. Chas. N. Braun Machinery Co., Fort Wayne, Indiana.

Miscellaneous

Will Purchase Immediately—Pneumatic Packaging Machine, used for chips, powder, cleanser; also dry mixers, chip dryers, crutchers, and automatic soap press. Address Box No. 747, care Soap & Sanitary Chemicals.

For Sale: 1—Twin Screw Plodder 6"; 2—5 Roll water cooled inclined steel roller mills, 16" dia. x 40" face. Houchin - Aiken Foot Presses; Soap Frames; Cutting Tables; Plodders, 12 x 30 and 16 x 40: Three Roll Water Cooled Steel Mills; 4 Roll Stone Mills; Dryers; Chippers; Powder Fillers; Mixers; Grinders; Filter Presses; Disc Filters; Pumps, etc. Send for Soap Bulletin No. 402. We Buy Your Surplus Equipment for Cash. Stein Equipment Corporation, 426 Broome Street, New York City, 13.

Special: Dopp 1200 lb. Soap Crutcher; H. A. 6 Knife Soap Chipper; Package Machinery Co. Toilet Soap Wrapper, 90 per minute; Filters; Pumps; Fillers: Labelers: Tanks: Dryers: Mixers, etc. Your inquiries solicited, Brill Equipment Co., 225 W. 34th St., New York 1, N. Y.

CHICKEN LOUSE CONTROL

(From Page 113)

the 4% mixture presented in the table. All birds were free of lice within 28 hours after application, while louse populations of four control birds remained apparently constant.

Conclusions

- 1. 4% DDT, 0.5% nicotine and 33% sodium fluoride dusts in pyrophyllite were efficacious in the control of the chicken body louse. Nicotine gave poor control against the shaft louse.
- 2. 4% DDT freed all birds of lice within 28 hours.
- 3. Complete control was obtained with 33% sodium fluoride within 52 hours, although one bird (No. 3) was apparently free of lice within 28 hours.
- The shaft louse appeared more resistant to the lousicides than the body louse.
- Under the conditions of these experiments no apparent harmful effects resulted in the use of these chemicals either upon the operator or the birds.

BIMS Hold Second Outing

The second of three golf outings to be held by the BIMS of New York was held at Winged Foot Golf Club, Mamaroneck, N. Y., July 25, with a crowd of over one hundred on hand. Charlie Darr of Harriet Hubbard Ayer brought along with him as a guest the well known entertainer, Harry Welch, better known as "Pop Eye" on the stage and radio. Following dinner he entertained the group for an hour with his impersonations of stage and screen stars.

War bonds were distributed as prizes to the following group of attendants:

Grand Prize: John V. Cavalero, Stelz Company, Inc.; R. Rooks, Avon Products; Robert A. Kramer, Evans Chemetics, Inc.; C. Ferguson; Ray F. Ougheltree, Zonite Products Corporation; Frank A. Nicholson, Richardson Taylor-Globe Corp.; James A. Leyden, Hampden Glazed Paper & Card Co.; C. E. Hemingway; G. W. Sands, Richard Hudnut; R. J. Anderson; Alec J. Dedrick, Van Ameringen-Haebler, Inc.; Harris Whitaker, Elizabeth Arden Sales Corp.; Paul Miller, International Cellucotton Products Co.; Russell Boland, Drug Trade News; K. L. Patterson, Stanco, Inc.; Milton Small; Pierre Harang, Houbigant Sales Corp.; John E. Gabrielsen, Allied Products, Inc.; William F. Zimmerman; David J. Stewart, Jr., Yardley & Co.; Sewell H. Corkran, E. N. Rowell Co.-A. H. Wirz; William H. Green, Addison Lithographing Co.; Charles Mooney, Elizabeth Arden; Dudley Shaw, Allen B. Wrisley Co.; Henry F. Hermann; Edward A. Bush, Bush Pan America, Inc.

The third BIMS outing of the season will be held at Wheatley Hills Country Club, Westbury, Long Island, August 24.

Rosin in Soap Increased

The reported use of rosin in soap rose sharply in the 12-month period Apr. 1, 1943 to Mar. 31, 1944, as compared with a similar period in 1942-43, according to the tenth annual Naval Stores Report, issued May 24, by the U. S. Department of Agriculture. In the year ending Mar. 31, of this year, 408,823 (500 pound) bar-

rels of rosin were used in soap as compared with 238,658 (500 pound) barrels for the corresponding period of 1942-43, the report shows. Although carryover was up and production was down for the period ending this year as compared with that of last year, consumption was up by nearly 600,000 (500 pound) barrels in the period just ended, as compared with that ended in 1943. No figures on imports or exports were available, thus making conclusions based on the report incomplete.

Dow Expands Fumigant Unit

Expansion of its fumigant division's technical and distribution organization to cover the Eastern part of the United States was announced early last month by Dow Chemical Co., Midland, Mich. As part of this move a new unit, with headquarters at the Dow Philadelphia office, is being set up. George F. Kerbey, of Trenton, N. J., formerly connected with the U. S. Department of Agriculture has been named to head the new branch. He will act in an advisory capacity on various fumigant techniques, serving the armed forces, food processors, food handlers and warehouse men in the Eastern territory.

Tighten Freon Restrictions

Tightened restrictions on the delivery and use of "Freon-12" (dichlorodifluoromethane, also "F-12") were announced July 5, by the War Production Board in amending conservation order M-28. All delivery and use is now subject to specific written authorization by the WPB. The order outlines the procedure for making application for "Freon."

Third "E" Star to Hooker

Hooker Electrochemical Company of Niagara Falls, N. Y. has been awarded a third star for their Army-Navy "E" flag, in recognition of their continued excellence in the production of materials for the War Department. This award was used as a stimulus to promote the success of the Fifth War Loan Drive, and in connection with these activities an exhibit of Hooker Products and the part they are playing in the war effort was erected on the company plaza.

Quortrup Wins C.S.A. Golf

The second golf tournament of the Salesmen's Association of the American Chemical Industry, held July 11, at Bonnie Briar Country Club, Larchmont, N. Y., was won by R. C. Quortrup, of the Barrett Division, Allied Chemical & Dye Corp., New York. About 116 members and guests were on hand for dinner, 92 playing golf. Prizes amounting to \$225 in War Bonds and Stamps were awarded. Included among the winners were:

Members, flight A, low gross, R. Quortrup, of the Barrett Division of Allied Chemical & Dye Corp.; flight B, Robert Quinn, of Mathieson Alkali Works; flight C, Paul Hiller, of Innis, Speiden & Co.

Low net, flight A, Harold Green, of L. Sonneborn Sons, Inc.; flight B, J. R. Eldridge, of Virginia Smelting Co.; flight C, W. O. Brewer, of Calco chemical division of American Cyanamid Co.

Guests, low gross, W. R. Cleary, of the Philadelphia office of the Barret division of the Allied Chemical & Dye Corp. and former president of the Philadelphia Chemical Club; low net, A. P. Federlein.

Members, kickers', Ira Vandewater, of R. W. Greeff & Co.; E. A. Bush, of Pan American, Inc., and James McInnes, of Commercial Solvents Corp.

Salvation Army Elects Eastwood

George A. Eastwood, president of Armour & Co., Chicago, has been elected a member of the Board of Directors of the Salvation Army Association of Chicago.

Turner Chi. Office Moves

The Chicago office of Joseph Turner & Co., Ridgefield, N. J., chemicals company, moved recently from 3958 Calumet Ave., to 435 N. Michigan Ave., Chicago 11.

To Reissue Commodity Lists

Two publications with which many firms seem to be unfamiliar, although they are much used for reference purposes in Washington, are Technical Papers 26 and 27,—the Standard Commodity Classification. Both are currently in process of revision.

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". . . and was dem loaded dice what he used?"

When and Where ...

SEVEN in the great pastime of African Dominoes may mean riches or poverty depending on when and where it is rolled . . . advertising properly timed and in the right media may pay large dividends, reversed the same advertising may be money completely wasted . . . advertising products to industries or people who never or rarely buy them is waste . . . trying to reach too many industries or buyers with any one advertisement is usually futile . . . it's the when and where based on facts, not fancy, that counts.

If you would reach the field of soap and detergent products, insecticides, disinfectants and chemical specialties completely, direct, and at minimum cost . . . and if a subscription renewal rate over 83% means anything to you . . . we suggest that you consider regular advertising in

SOAP and Sanitary Chemicals 254 WEST 31st STREET NEW YORK 1

Member Audit Bureau of Circulations

Tale Ends

SAYS a well-known soaper: "We can buy practically all the tallow and oils we want. What we need now are a few men in the factory who know how to make it up into soap." Well, maybe the manpower situation will take a slight turn for the better over the next few months. The armed forces seem to have passed the peak of their greatest need for more men.

One of the best names we have yet noted for a liquid household insecticide is "Flak." Coined by Wilbert of N. Y. of no-rub wax fame for their new insect spray. Will be appreciated by airmen who have been on a mission or two.

Expansion of soap production and modernization of plant facilities in Latin America has been wide over the past decade, and will be wider over the next, says one close to the picture.

Mystery . . . a company is offering pyrethrum extract for August delivery on a strictly C.O.D. basis. We have been asked how come. As pyrethrum is under strict allocation, only WPB can answer,—but we doubt if the firm can really deliver pyrethrum extract.

Hope for pine oil users, but not until late in the year. The present scarcity of pine oil, also under allocation, will be relieved by a return to something akin to normal production along about October. Production from April through August very skimpy on account of labor shortage.

Suggestion to soapers who mark small cakes of hotel toilet soap with die scoring on each edge of the center of the cakes. These indentations weaken the cakes and make them break in half the first time used unless handled very carefully. Especially today with changed fat composition and some soaps quite "short," the markings designed to make the larger cakes break in half easily, should be omitted from the small hotel cakes.

NDURING Q U A L I T Y DISCOBOLOS Discus Thrower) Vatican, Rome

IME-DEFYING endurance . . . flawless composition . . . perfect balance . . . again and again the works of the ancients embody these qualities.

We at Ungerer have taken infinite trouble to instill these same characteristics into all Ungerer Products. The continued acceptance on the part of manufacturers of our volatile oils, aromatic materials and perfume bases is ample reward for the time and energy that have gone into their making.

UNGERER & CO.
161 SIXTH AVENUE NEW YORK

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